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Laboratorium Prof. Dr. H. Dyckerhoff KG., Cologne
Federal Republik of Germany

Monographic Information about

REGENERESEN®

(Low-protein)

according to Prof. Dr. H. Dyckerhoff

Biologically Active Ribonucleic Acids (RNA) for Treating Disturbances in the Protein Anabolism by Intensifying the Protein Biosynthesis in Cases of Chronic and Degenerative Diseases – Wear and Tear Phenomena – Underdevelopment – Regenerative Disturbances – Lowered Resistance

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General Information about REGENERESEN(R)

according to Prof. Dr. H. DYCKERHOFF

on the basis of organospecific ribonucleic acids (RNA) from organs and tissues of young cattle or foetuses and ribonucleic acid from yeast.

In the early fifties, DYCKERHOFF took the view that the RNA - as "catalysers of the protein biosynthesis" - were the great chance to fill the obvious gap in our therapeutical measures, by using the effect of RNA for the benefit of human therapy.

It was in those early days that the following postulate became the basis of his ideas: "There must be a protein dysbolism for this therapy to be successful. The underlying principle of such a therapy can only be the normalization of a disturbed protein synthesis."

At the Therapy Congress held in Karlsruhe, in 1954, DYCKERHOFF said: "We believe that protein-building, highly specific tissue enzymes which we call REGENERESEN represent the effective principle underlying this therapy." Today, it is an established fact that "tissue enzymes" are precisely defined and biologically active RNA.

The clinical administration of REGENERESEN(R) for treatment of protein dysbolism and degenerative processes, by using the corresponding organospecific RNA, is fully justified as supported by the recent findings of worldwide research.

Composition

One 5 ml ampule contains 6 mg of organospecific ribonucleic acids from foetal and young animal cells and ribonucleic acid from yeast.

Properties

It has been proved that in every tissue structurally different ribonucleic acids (RNA) - the composition of which is dependent upon desoxyribonucleic acids - control the biosynthesis of the organospecific proteins. The RNA function like matrices, so that the amino acids are brought into correct position relative to each other. Ribonucleic acids of the kidney, for instance, build up renal protein, whereas ribonucleic acids of the pancreas synthesize pancreatic protein, etc.

The importance of the ability to regeneration of all tissues to life and health is proved by the fact that the tissue proteins must be replaced by new ones about every six months, a fact that has been corroborated by isotope experiments. The protein biosynthesis is of crucial importance. If the RNA is destroyed in tissue cultures, all growth ceases. Growth will however start again when organotropic RNA is added to the culture fluid.

To bring these fundamental physiological findings to therapeutical use, DYCKERHOFF has isolated the RNA from foetal and young animal tissues and introduced them to therapy under the name of

R E G E N E R E S E N (R).

The efficacy of this therapy was confirmed by clinical tests and on animals, as well. Research at the Pathological Institute of the Munich University has proved by tracer tests that the addition of REGENERESEN to a culture solution may increase tissue growth by about 100 % (KALB).

At the Frankfurt Institute for Therapeutical Biochemistry, Prof. WACKER made the fundamentally important discovery that RNA is apparently specific to the organ rather than to the species.

Pharmacological and toxicological tests proved the efficacy of REGENERESEN and its harmlessness, that it is without any signs of acute or chronic toxicity, thereby fulfilling the requirements of the "nil nocere".

The REGENERESEN(R) therapy is, therefore, the most natural way to treat all those diseases which are caused by disturbance of the protein biosynthesis and of the development of cells, i.e. by regeneration.

Indications

All chronic and degenerative lesions caused by a disturbance of the protein synthesis which is connected with a disturbance of incretory functions, signs of overstraining, climacteric period, management disease, arterio-sclerosis, arthrosis, hypogenesis of the central nervous system, vegetative disorder, hypotrophy, mongolism, retardations, etc.

Dosage and Mode of Application

The REGENERESEN therapy is an individual therapy and scheming is not possible. On the basis of his many years of experience, Prof. DYCKERHOFF has compiled an index of indications with recommendations for dosage and application, which greatly facilitates the choice of the specific preparation (see pg. 75 ff.). Depending on the severity of the case, up to four ampules of 5 ml each may be administered every other day. All REGENERESENs are miscible with each other. The injection is made intramuscularly, generally into the upper external quadrant of the glutaeus. REGENERESEN can be administered at outpatient treatment. Confinement to bed is unnecessary.

Side Effects and Concomitant Phenomena

With REGENERESEN(R), none have been obseved hitherto.

Contraindications

Caution in cases of manifest gout.

Specific Notations

Antibiotics (for inflammatory bacterial diseases and septic processes), whose mode of action originates from an inhibition of the protein biosynthesis, treatment with cytostatic drugs (immunity suppression) and high-energy (ionising) rays may reduce the efficacy of the REGENERESEN.
The note "low-protein" refers to the protein which forms an integral part of the r-RNA. Foreign proteins with allergen properties are not contained.

Forms of Administration and Pack Sizes

Original pack: 1 ampule of 5 ml.

Altogether, the assortment of ampules comprises 72 different REGENERESENs (synthesized from 43 organs). At room temperature, they will remain stable for years.

The special kind of REGENERESEN(R) called OSTEOCHONDRIN(R) is supplied in the original box containing 5 ampules;

the special kind of REGENERESEN(R) called RN 13(R) is available in the original boxes containing 5 or 10 ampules.

General Information about SPECIAL REGENERESEN(R)

OSTEOCHONDRIN(R) - for vertebral diseases, osteochondrosis, etc.

Being aware of the correlation between RNA and degenerative lesions within the region of the apparatus of locomotion, DYCKERHOFF collaborated with research workers (Biedermann, etc.) experienced in this field, in order to produce

OSTEOCHONDRIN(R)

composed of five different RNA. OSTEOCHONDRIN has been used with success in the treatment of rheumatic and osteochondrotic diseases, i.e. in the case of attrition appearing within the region of the apparatus of locomotion.

Composition

One 5 ml ampule with 6 mg of RNA from intervertebral discs, cartilage, synovia, placenta (young animals) and RNA from yeast, 5o mg of procain.
One ampule with 15o I.U. of hyaluronidase (approx. 1 mg) dry substance for dissolution.

Properties

The organospecific ribonucleic acids (RNA) contained in OSTEOCHONDRIN bring about the biosynthesis of organospecific proteins and the regeneration of damaged tissues or organs.

Procain has been added as a result of favourable experience in practice.

Hyaluronidase encourages the resorption and good distribution of the injected substrate and, by increasing the permeability, facilitates the penetration of the various OSTEOCHONDRIN components into the tissues.

Experience and observations have shown that OSTEOCHONDRIN fully meets all expectations and can be used as basic therapy for rheumatic and osteochondrotic diseases, i.e. for attrition occurring in the apparatus of locomotion, in the vertebra, and especially in the small vertebral joints (arthrosis deformans, spondylosis and osteochondrosis).

Indications

Vertebral diseases, such as osteochondrosis, osteoporosis, arthrosis deformans, spondylosis, brachialgia.

Dosage and Mode of Application

The dosage follows the severity of the disease, in the average every second day up to four ampules of OSTEOCHONDRIN with hyaluronidase may be injected. The OSTEOCHONDRIN is drawn into a 1o ml injection syringe. About half the liquid is filled into the hyaluronidase ampule for dissolving the dry substance. This solution is then drawn back into the injection syringe. Injections are made intramuscularly into the upper external quadrant of the gluteus. OSTEOCHONDRIN can be administered as outpatient treatment. Confinement to bed is unnecessary.
OSTEOCHONDRIN is miscible with every other kind of REGENERESEN.

Side Effects and Concomitant Phenomena

None have been observed with OSTEOCHONDRIN.
Caution is recommended in the case of allergical anamneses and the hyaluronidase ampule should be dropped, where indicated.

Contraindications

Gout (disturbance of the purine metabolism).

Hyaluronidase should not be injected into infected tissue or malignant tumours.

Specific Notations

Antibiotics (for inflammatory bacterial diseases and septic processes), whose mode of action originates from an inhibition of the protein biosynthesis, treatment with cytostatic drugs (immunity suppression) and high-energy (ionising) rays may reduce the efficacy of OSTEOCHONDRIN.

Forms of Administration and Pack Sizes

Original pack: Five 5 ml ampules of OSTEOCHONDRIN and five 15o I.U. ampules of hyaluronidase.

At room temperature, OSTEOCHONDRIN will remain stable for years.

RN 13(R) - for Geriatrics -

Composition

One 5 ml ampule contains 6 mg of ribonucleic acids from liver, spleen, kidney, heart, intima and cerebral cortex (foetal), ribonucleic acids from placenta, testis, ovary, suprarenal cortex, hypothalamus, hypophysis and thalamus (young cattle) and ribonucleic acid from yeast.

Properties

SVED and WAINRIB reported on their observations on presenile and old people, after BORGER and HYDEN had already found an increase in the RNA concentration in the cells up to the age of forty, followed by a decline. Contrary to DONATI, HYDEN as well as HYDEN AND LANGE have confirmed the connection between aging and RNA concentration.

SPEAKER stated that regular doses of yeast RNA to aging men and women improved sleep, increased the appetite, reduced fatigability and ameliorated the feeling of well-being.

Since the process of aging is connected with a decline in the RNA concentration, resulting in a retrogressive course of the protein synthesis, DYCKERHOFF prepared a combination compound for geriatrics from 13 different RNA under the designation

RN 13(R).

The preparation was tested by WENTZ in a double blind test. Apart from the subjective improvements - as already described by CAMERON and others - an objective intensification of the protein biosynthesis characterized by a marked increase in plasma proteins was clearly noticed, whereas patients of the placebo series showed a decrease.

Indications

Geriatric troubles, senile incretory involution, general signs of overstraining; increased resistance, maintenance of potential strength, and as a REGENERESEN after-treatment.

Dosage and Mode of Application

The injection is made intramuscularly, generally into the upper external quadrant of the gluteus, every other day. RN 13 can be administered as outpatient treatment. Confinement to bed is not necessary.
RN 13 is miscible with every other kind of REGENERESEN.

Side Effects and Concomitant Phenomena

have not been heard of hitherto.

Contraindications

Gout (disturbance of the purine metabolism).

Specific Notations

Antibiotics (for inflammatory bacterial diseases and septic processes), whose mode of action originates from an inhibition of the protein biosynthesis, treatment with cytostatic drugs (immunity suppression) and high-energy (ionising) rays may reduce the efficacy of RN 13.

Forms of Administration and Pack Sizes

Original pack: Five and ten 5 ml ampules.

RN 13(R) will remain stable at room temperature for several years.

AU 4(R) - for Otology, for Degenerative Labyrinthine Deafness -

Based on the work of BECK and KRAHL, DYCKERHOFF compiled four different RNA to form a combination, which he named

AU 4(R).

GAUS measured the positive RNA effect of AU 4 on the internal ear by means of audiograms.

Composition

One 5 ml ampule contains 6 mg of ribonucleic acids from the internal ear, auditory nerve, auditory path, auditory centre, and ribonucleic acid from yeast.

Properties

Research work had revealed a diminution of RNA in the experimentally damaged internal ear of guinea pigs (BECK and KRAHL). Organospecific RNA normalize the protein dysbolism and encourage the necessary regeneration in case of the cited indications. The efficacy was confirmed by audiograms.

Indications

Presbyacousis, degenerative diseases of the internal ear, acute impaired hearing, medicamentous or toxic impairment of the internal ear.

Dosage and Mode of Application

One ampule each of AU 4 and placenta (of the same sex) or for patients over forty of AU 4 and RN 13, every other day or, in serious cases, daily. The injections are made intramuscularly generally into the upper external quadrant of the gluteus. AU 4 can be administered as outpatient treatment, confinement to bed is unnecessary. AU 4 is miscible with every other kind of REGENERESEN.

Side Effects and Concomitant Phenomena are unheard of hitherto.

Contraindications Gout (disturbance of the purine metabolism).

Specific Notations

An accurate diagnosis of the actual impairment to the internal ear is always of great importance. Sometimes, audiometric findings may differ from the first subjective impression.

Antibiotics (for inflammatory bacterial diseases and septic processes), whose mode of action originates from an inhibition of the protein biosynthesis, treatment with cytostatic drugs (immunity suppression) and high-energy (ionising) rays may reduce the efficacy of AU 4.

Forms of Administration and Pack Sizes

Original pack: One 5 ml ampule.

At room temperature, AU 4 will remain stable for years.

General Information about Ribonucleic Acids (RNA)

When MIESCHER discovered the nucleic acids about 100 years ago, all that was known about then was that they are compounds with acid properties, occurring in nuclei.

MIESCHER's work was continued and developed in Europe and North America by countless successors, including, among others, ALTMANN, NEUMANN, KASSEL; JONES, LEVENE and GULLAND, whose contributions are contained in several publications: ALTMANN, DAVIDSON and CHARGAFF, JONES, LEVENE and DAVIDSON. Initially, it was reported that RNA is to be found in a number of animal tissues; but it was not until 1940 that investigations and biochemical observations revealed that RNA is the basic constituent of animal, plant and bacterial cells. All the works essentially deal with animal and bacterial RNA. PILET reports on RNA in plants.

Meanwhile, this field of research has grown to such an extent that it is almost impossible for one scientist alone to survey it entirely. It became obvious that the ribonucleic acids (RNA) are playing the dominant role in the molecular regeneration of protein in body cells and in the preservation of organic functions. A high concentration of nucleic acids is found wherever a cell is growing or dividing (DAVIDSON and WAYMOUTH). Nearly all tissues must be replaced by new ones about every six months; the protein biosynthesis is of crucial significance.

Laborious and detailed research work crystallized into the fundamental finding that all life is dependent upon two basic substances: nucleic acids and proteins (KRONBERG). The desoxyribonucleic acids (DNA) are the code of inheritance and give the information to the RNA for synthesis of organospecific proteins on the ribosomes.

As it are only the RNA which effect the building of proteins, they deserve a prominent place in this study. Here, concerning the effect of RNA, the findings of CAMERON on the administration of DNA and RNA solutions are of special significance: the RNA favourably influenced dysmnesia, for instance, whereas DNA had no effect whatever. The relationship between RNA and the protein synthesis as confirmed by biochemical tests has been proved experimentally by numerous research works in this field in the course of the past years (BRACHET, HOAGLAND, KONRBERG, WATSON, etc.). It could be demonstrated that all signs of growth cease in tissue cultures when the RNA are destroyed. Growth restarts again, however, when organospecific RNA are added to the culture medium. The synthesis of proteins from amino acids only occurs in the presence of RNA. It was further established that non-denaturated RNA are able to stimulate considerably the protein biosynthesis. NEUMANN and GROSSMANN, LANDAUER, KALB, CAMERON, BEERMANN and CLEVER, HYDEN and EGYHAZI, and many others were able to confirm the process summarized as follows :-

"The RNA lead to an intensification of the protein biosynthesis. Energy is provided by adenosine triphosphate in the mitochondria."

The numerous publications have induced DAVIDSON and COHN to compile a history under the title "Progress in Nucleic Acid Research and Molecular Biology".

There are millions of proteins, but - as a general rule - they are all synthesised of twenty basic constituents belonging to the same chemical group of materials: the amino acids. Nowadays it is almost a routine procedure to analyse how the amino acids are arranged in the horizontal axis in a protein molecule, and there are apparatus which can perform such work (sequency analysis) automatically (BROWNLEE).

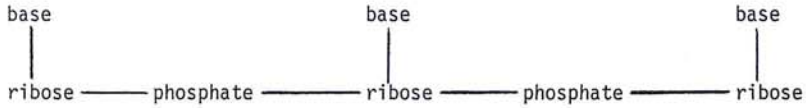
Two amino acids can join to form a dipeptide, three will form a tripeptide, and so on, up to a long chain or "polypeptide". Proteins can consist of as many as one thousand amino acids; the protein molecules are therefore also called: polyamino acids (BOGEN). SCHULTZE conducted further investigations regarding the relationship between the production of RNA and protein in various organisms. As a result of his work, we know today that the RNA metabolism is more or less proportional to the protein metabolism. The protein metabolism in all tissues and cells is, however, about twenty to thirty times higher than the RNA metabolism. This gave DYCKERHOFF the idea to compare RNA with enzymes. The determinative factor for the correct structure of the individual protein molecule is alone the sequency which means the order of the various amino acids in the chain. This order is by no means accidental, but a most exact and definite "coded" sequency.

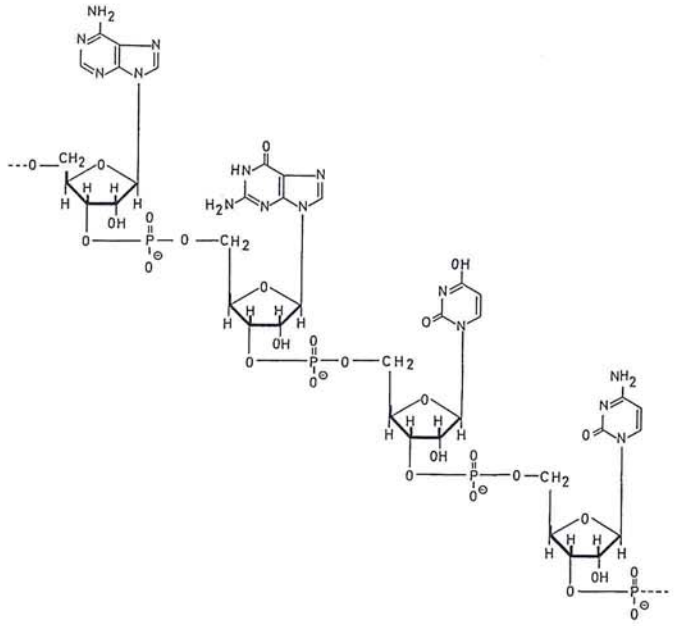
The information for the correct sequency originates from the DNA which transmits the coded message for the synthesis of the individual protein molecule via the different types of RNA (messenger = m-RNA, transfer = t-RNA, ribosomal = r-RNA). The stages in this flow of information are defined by WALLENFELS and WEIL as "transcription" - information from DNA to RNA -, and as "translation" - information from RNA to protein.

Summary

Exactly coded ribonucleic acids, replete with precise information, act as inducers and control the entire protein biosynthesis.

SANGER was able to show that an RNA molecule contains no less than twenty subunits which are connected with one another in the following manner:

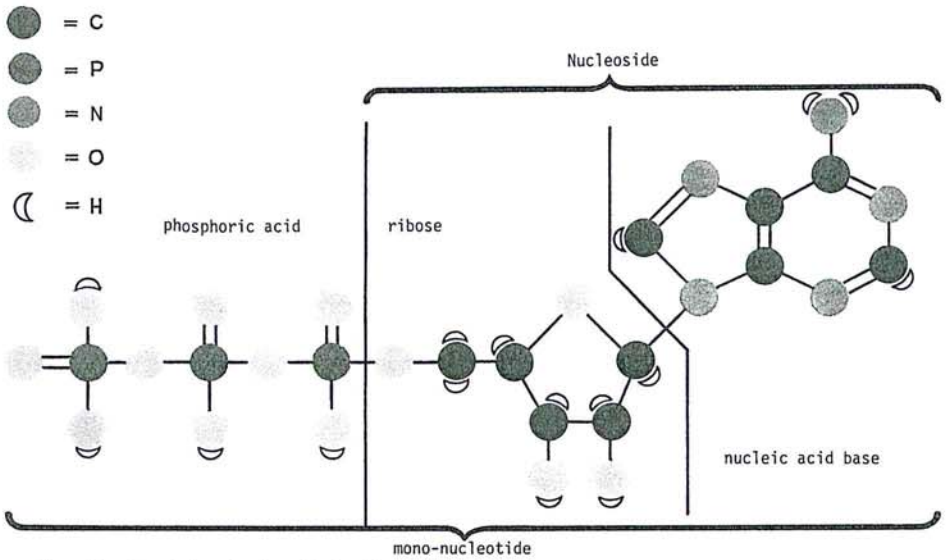




Primary Structure of the Ribonucleic Acid

Starting point is the MONONUCLEOTIDE

consisting of one molecule each of phosphoric acid, sugar and organic base.

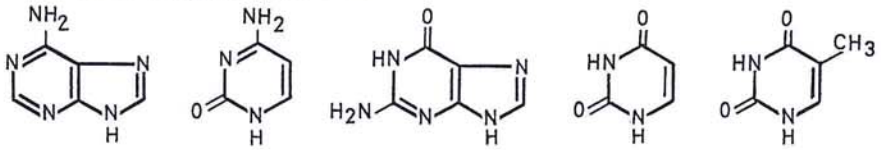


The molecule of phosphoric acid is always the same.

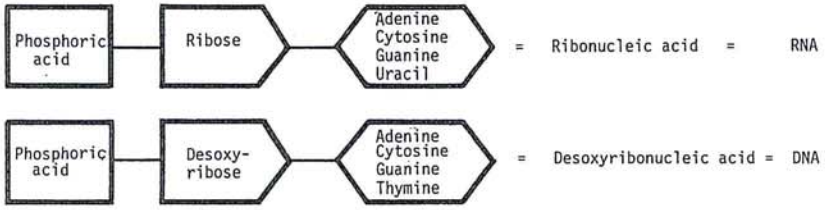
The molecule of sugar is either a 5-carbon-atom sugar = RIBOSE

or this sugar less one oxygen atom = DESOXYRIBOSE.

The molecule of organic base is either



ADENINE or CYTOSINE or GUANINE or URACIL or THYMINE.



Three MONONUCLEOTIDES = 1 TRIPLET = INFORMATION UNIT = 1 CODON

The base sequency of the mononucleotides in the triplets and the sequency of the triplets are the determinative factors for consequent information.

PHARMACOLOGY of Ribonucleic Acids (RNA)

Of the meanwhile very extensive international literature on the PHARMACOLOGY of RNA a few examples with a bearing on the REGENERESEN therapy are cited below.

MEMORY

In 1936, GILLESPIE differentiated between three levels of the memory: 1 - Reception of impressions; 2 - storage; and 3 - subsequent emission. In 1950, KATZ and HALSTEAD supposed the protein to be the storage medium of the memory, a hypothesis that was proved true later by the Swedish scientist HYDEN. In learning experiments with rats over a period from 1960 to 1963, HYDEN et al. ascertained a marked increase in the RNA concentration of neurons. Already in 1962, HYDEN had assumed a specific alternation in the sequence of RNA in nerve cells, affecting the protein biosynthesis in the entire brain. The experiment of MORREL must be seen in this light; by producing artificially an epileptogenic zone in the one half of a rat's brain, he succeeded in obtaining a corresponding epileptogenic zone in the opposite side of the cerebral cortex.

BRAND and FRANK transferred brain from trained to untrained animals and ascertained that there was a reduction in the learning period as compared with control animals. These results accord with those obtained by UNGAR, LUTTGES, KRUGLIKOV.
COOK demonstrated in 1963 that rats receiving daily injections of RNA learnt faster and retained their lessons better than control animals.

In the recent past, an ever increasing number of impressive papers reports that learning and memory are connected with an increase in RNA and the protein concentration of the neurons involved (McCONNEL, MAGOUN, BEERMANN and CLEVER, FRENSTER, SAMPSON, SUTTON, GAITO, DINGMANN and SPORN, CHAMBERLAIN, BENSON, FJERDINGSTAD, GROSS and CAREY, LUTTGES, BYRNE, JACOBSON and BABICH). Discussions are still underway, but it can at least be assumed that there is a direct connection between mental processes and brain RNA. For this reason, experiments were conducted to find an in-vitro system for the study of factors which regulate the metabolism of brain RNA. SAMLI and ROBERTS investigated the properties of RNA fractions from the nuclei of brain cells, which stimulate the formation of amino acids by means of brain ribosomes. The results indicate that the brain contains low-molecular RNA.

Summary: The existing literature demonstrates that RNA play a decisive role in the process of remembering, building up "memory", i.e. the reception of impressions, the storage of such impressions and the subsequent emission.

X-Ray Protection

SUGAHARA found that mice exposed weekly to X-rays survived longer when injected at the same time with a preparation from yeast RNA three times a week.

MAISIN was also able to increase the survival rate after X-ray treatment from 4 to 5 % to 60 to 65 % by injected RNA. The experiments were confirmed by EBEL. WAGNER and SILVERMANN have also observed the protective properties of RNA against X-rays in guinea pigs.

Viruses

The effect of RNA on viruses is still being investigated. It could already be shown by SKLJANSKAJA, TIKHONENKO and LOUISOT, however, that a favourable influence on viruses is possible. In 1968, SKLJANSKAJA discovered that 300 to 500 µg of RNA per mouse produce resistance against viruses.

LOUISOT and COLOBERT also observed that the multiplication of viruses was incomplete if one added a heterologous RNA, i.e. yeast RNA. If the foreign RNA is homologous to the cell under examination, then inhibition is stronger if not complete.

EBEL carried out further experiments on RNA's inhibiting effect on the multiplication of myxovirus.

KAWADE demonstrated that RNA from calves liver, for example, greatly induces the production of INTERFERON. Interferon is a proteinous antibody which forms in cells infected by viruses.

Surgery - Wound Healing

Injections of yeast RNA or of RNA from carp embryos into carps with a severed spinal cord resulted in a quicker recovery and coordination of the swimming ability - probably due to a regeneration of the spinal cord (BATKIN).

GROTH observed the reaction of grafts soaked in RNA. Skin grafts of rabbits, which were first immersed in homologous RNA and then transplanted on the animal which had been given RNA in vitro, survived four times longer than controls. In his experiments, he tested this theory on dogs by treating renal and liver grafts with RNA obtained from the spleen of the future recipient (autologous RNA) or of another dog (homologous RNA). After transplanting in untreated recipients, about one quarter of these living organs had a noticeably much longer period of survival and functioning.

BELOUS studied the collagenous biosynthesis during the various stages of regeneration in artificially fractured rabbit bones. Intramuscular application of organospecific RNA considerably speeds up the synthesis of collagen in the site of radius fracture and shortens the length of the healing process.

Suitable experiments on the femurs of rats (BELOUS) confirmed these rabbit tests. Organospecific RNA from healing bone tissue accelerates the recovery: the growing tissue matures faster, the resistance to separation of the fragments was greater and the collagen percentage was higher. Bone RNA aggregated by means of dodecylsulphate or bentonite was ineffective. At present, work is underway to introduce this method into practical clinical activities.

Osteoarthritic Symptoms

MANKIN AND LAING and MANKIN AND ORLIK investigated the relationship between the synthesis of protein and the RNA concentration in the articular cartilage of osteoarthritic sheep dogs (Alsatians). They found that in the affected areas the RNA concentration decreases in direct proportion to the progress of the disease. There is hence a direct correlation between RNA concentration and severity of the disease.

Heart Muscle Injuries

Russian scientists carried out animal experiments involving injuries to heart muscles which were registered by electrocardiogram as well as histological and biochemical tests. By means of RNA injections complete recovery was achieved as confirmed again by electrocardiogram and other tests (POLEZHAEV).
WOOL examined the effect of diabetes and insulin on the nucleic acid metabolism of heart muscles. He discovered that in diabetic patients there was a decrease in the quantity and concentration of RNA in the heart musculature and that there was a noticeable reduction in the ratio of RNA to DNA. A decrease in the number and effectiveness of heart muscle ribosomes indicates a deterioration in protein biosynthesis during the stage of manifest diabetes, recognized by the organ's loss of weight and the amount of protein in each cell.

Liver Regeneration

GENTILE published comparisons of the old and new theories about liver regeneration. He conducted his experiments on male rats. RNA were present in the blood serum of rats after partial removal of the liver. One of them stimulated cell growth and is certainly the humoral factor in the regenerating liver. Mitotic activity appeared after about 24 hours in regenerating liver. The DNA increase was preceded by a steep rise in RNA synthesis. In regenerating liver, the greatest RNA activity was in the periportal and not in the centrilobular area (BUCHER).

Malignant Growth

In the recent past, a fundamental change has taken place in the judgement of malignant growth. The fact alone that the designation "carcinosis" may be used openly makes it evident how much common opinion nowadays has moved away from that of Rudolf Virchow. In former times, anybody who would believe in endo-

genous resistance also against carcinosis, was regarded an outsider. Today, scientists speak freely of immunotherapy for cancer, even of unspecific immunotherapy for malignant growth, and literary reports on the subject are being written in ever-increasing numbers.

Here are two examples which were published quite recently :-
PILCH et al. synthesised RNA from lymph nodes and spleen of guinea pigs which had been immunized with induced benzpyrene C_3Hf/HeN murine sarcome. With this RNA, they incubated healthy C_3H spleen and injected the synthesised substance to C_3H mice which were then tested with 10^4 living benzpyrene cells. As a result, an obvious diminution of tumour growth was found. In this case, the treatment of active RNA with ribonuclease (RNase) reduced the efficacy completely, whereas desoxyribonuclease (DNase) and proteinase (Pronase) showed no effect at all. This is obviously the question of a single-stranded RNA.
A similar malignant growth restraining effect could be achieved by the authors by applying spleen RNA of guinea pigs which had previously been immunized with Fisher-344 rat sarcoma (BP-1R). The test with benzpyrene indicated also in this case obviously reduced growth of the examined tumour. Tests with methylcholanthren as carcinogen brought similar results. KREMENTZ'es studies will probably be of greater practical interest. Here, obvious therapeutic results could be achieved by using transfer factors from sensitised lymphocytes of melanome carriers for the treatment of melanomes of other patients.

Earlier than Krementz, the authors NIU, DeCARVALHO, AKSENOVA, ALEXANDER et al. could verify that applied RNA from healthy tissue stops the growth of tumours and reduces their malignity.

In the meantime, research by F. LACOUR et al. had shown that "synthetic RNA can be applied successfully against cancer of the breast on mice". The authors' findings disclosed a significant reduction in the frequency of breast cancer on C_3H/He mice which had been treated with synthetic polynucleotide poly(A)-poly(U). As synthetic RNA stimulates the antibody formation in mice, scientists expect it to produce also an immunological resistance against breast cancer viruses (MTV).

Geriatrics

The protein biosynthesis is dependent on the age. ORREGO and ORREGO AND LIPMANN were able to ascertain that the protein synthesis in three-day old rats was fivefold that in adult rats. GUROFF also demonstrated that protein synthesis by RNA was much greater in young animals.

The life duration of rats could be increased from 7 to 18 % by regular doses of yeast RNA; this was discovered by ROBERTSON, GARDNER and others.

According to SATAKE, enhanced vitality is connected with an accelerated RNA metabolism. Using interstitial cells of rats of various ages, JARLSTED and STEWARD noticed that the RNA concentration is increased when there are re-

cognisable signs of a special biological activity; it dropped when the activity subsided. SOLYOM investigated whether RNA has a specifically pharmacological stimulating effect. As pharmacological comparative substances, he used the well-known stimulants, caffeine and uric acid which is assumed to have a stimulating effect on humans. He found that RNA are no stimulants; they also have no similar reaction to that of uric acid, which accords with the characteristic position of RNA in the biosynthesis of protein.

Interesting in this connection is the fact that plants have the same biological synthesis and decomposition of RNA. By examining etiolated seedlings of lens culinaris, PILET discovered that in plants too only about half the quantity of RNA (223 $\mu g/10^7$ cells) was present in old cells as compared to younger cells (456 $\mu g/10^7$ cells). There was a significant increase in the activity of ribonuclease in old cells.

Clinical Research of Ribonucleic Acids (RNA)

After these successful experiments on animals, it seemed reasonable to make therapeutical use of RNA for the benefit of human beings.

Memory (cf. pg. 15)

In 1961/1963, CAMERON reported on a series of experiments with RNA doses on old people. A marked improvement in memory and in the ability of remembering was evident. He noticed that the alpha waves in the electro-encephalogram were more structural and regular, and that alpha activity had increased.

Basing on the findings of MAGOUN, CAMERON administered RNA doses to patients with cerebral sclerosis and registered an improvement in memory in 50 % of the cases. Patients suffering in particular from mental confusion and serious disturbances of the memory showed an improvement, confirmed by an ameliorated ability of remembering, a decrease in confusion and an increase in purposeful activities.

Retardation

The close relation between the grade of intelligence and RNA has been realized by STETTEN, FULLER, BROOKS and KRAL. In this connection, ENESCO considers the administration of RNA a most important therapy for mongolism. Further research is underway.

Surgery - Wound Healing (cf. pg. 16)

WILLIAMSON and GUSCHLBAUER noted a marked increase in RNA in tissues regenerating due to wound healing, and they were able to prove the significance of RNA in this regeneration process by experimental investigations. GROTH reported that human skin which is intended for transplantation grows on patients with burns much better if dipped before in RNA solution.

Geriatrics

SVED and WAINRIB reported in 1962 on their observation of presenile and old people, according to BÖRGER and HYDEN, who had already found an increase in the RNA concentration of cells up to the age of forty followed by a decline then. Contrary to DONATI, HYDEN as well as HYDEN AND LANGE have confirmed the connection between aging and the RNA concentration.

SPEAKER stated that regular doses of yeast RNA to aging men and women improved sleep, increased the appetite, reduced fatigability and ameliorated the general feeling of well-being.

Detailed Information about REGENERESEN(R)

Chemistry

Today, there are a number of excellent methods available for the isolation and cleaning of ribonucleic acids from animal tissues; these enable one to obtain nucleic acids of a very high degree of purity. The laboratory technique has been developed to such a stage that it is possible to separate almost completely nuclear ribonucleic acids, t-RNA, m-RNA and ribosomal RNA. CHANDRA and APPEL provide a good description of the methods of extraction. 80 to 90 per cent of cellular RNA are to be found in ribonucleoproteid particles, commonly known as ribosomes. In principle, the isolation and cleaning of RNA is as follows: an organ is homogenised, deproteinised with lauryl sulphate and shaken at a cold temperature with a phenol solution. The watery phase, which contains the RNA, is then separated by means of centrifugation, extracted several times with phenol and the residue phenol is removed from the watery phase with ether. The ribonucleic acids in this now virtually protein-free watery phase are precipitated with alcohol, washed with acetone and, finally, dried in a vacuum. In this way, they can be kept almost indefinitely. The extracted amount varies greatly from organ to organ. If the work is carried out skilfully, for example, 50 to 60 mg. of liver RNA can be obtained from 20 grams of embryonal liver from a cow, whereas only 4 mg. of heart RNA can be extracted from 20 grams of embryonal heart from a cow.

Constitution of the Isolated RNA:

Nitrogen concentration	15 % to 16 %
Phosphorus concentration	9 % to 9.8 %
N/P ratio	1.67 to 1.71
Ribose concentration	40 % to 43 %

Biuret reaction to detect free protein: negative

Light absorption: $EX\ {}^{1\ \%}_{1\ cm} = 260$ at 260 nm, measured in water.

More searching, special analyses of purified organo-specific RNA, revealed the following, for example:

Pancreas RNA from calves:	RNA = 87 %	ribosomal protein = 8.1 %	DNA = 4.9 %
Lung RNA from embryos:	RNA = 84.4%	ribosomal protein = 11.8%	DNA = 3.8 %

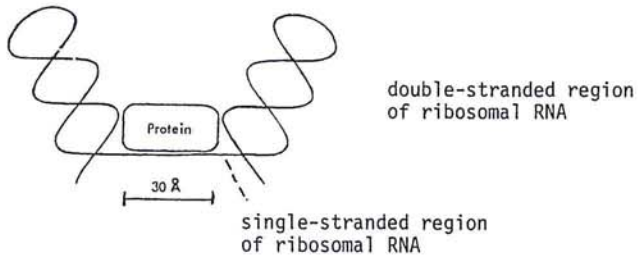
Determination methods:

RNA = Orcin method

ribosomal protein = Lowry method

DNA = diphenylamine method

As can be seen, the percentage of DNA is negligible.
If one recalls to mind the degree of purity required by DAB VII for digitoxin or ascaridol, then one can regard the percentage of DNA as a tolerable amount of impurities. In view of the method of preparation, it must be assumed that they can be only fragments of DNA. By using the sephadex column it emerged that the approximate molecular weight of REGENERESEN is in the region of 10^4 dalton. Furthermore, no hypersensitivity reaction has been observed over the past twenty years, during which almost three million ampules of REGENERESEN were used. This fact also proves unequivocally that the proteins detected in REGENERESEN contain no allergenic albuminous substances. As already mentioned, the biuret reaction is always negative. The proteins were detected only with the LOWRY method. This would seem to indicate that these proteins are an integral component of RNA, in other words, it is a question of ribosomal RNA (rRNA). If one recalls to mind the hypothesis of Rosalind COTTER et al., whereby double-stranded helical ribonucleic acids with proteins are integrated in the rRNA to fulfil special tasks of the ribosomes, then this corresponds with the finds made by AXMANN during his enzyme experiments: resistant to ribonuclease (RNase), inactivated by pronase P.



Hypothetical Model of Ribosomal External Surface
to Träger

In some recent experiments, A. CURTZE has again investigated chemically the reaction of RNase on pancreas REGENERESEN. After a 24 hour treatment with RNase, he discovered that there had been a 16.6 % decrease in RNA, and the RNA was completely destroyed after a treatment with pronase P. Both results accord well with the above-mentioned finds.

Pharmacology

Numbered among earlier experiments is the work on tissue cultures by KALB (under WRBA). In his investigations of the specific ability of liver REGENERESEN in vitro to increase the metabolic rate, KALB used ribonucleic acid whose phosphate group contained 32 P. He was thus able to prove the formation of new ribonucleic acid in his tissue cultures. The assimilation of marked ohosphate rose by 100 % in tests with REGENERESEN, whilst the addition of suitably homogenised lyophillised cells resulted in a growth of only about 50 %.

Of fundamental importance would appear to be the work of WACKER's Institute for Therapeutical Biochemistry at the Frankfurt/Main University. He himself was able to publish tests which proved that protein biosynthesis is accelerated under the influence of pancreas REGENERESEN. For this purpose, he used the very smart method of demonstrating an increased synthesis in rats by employing tritiated leucine. The rate of biosynthesis rose by about 50 %. These experiments have a multiple and fundamental significance: On the one hand, this unequivocal testing procedure proves that in animal experiments the protein biosynthesis can be stepped up by the addition of an RNA preparation; on the other hand, it was again demonstrated that the preparation was markedly organospecific: the protein biosynthesis in the liver and in the spleen was not stimulated to the same extent by pancreas REGENERESEN. However, of particular importance as regards the therapeutical application is the fact that these experiments proved that organspecifity takes priority over species-specifity: the RNA effective in rats was obtained from the pancreas of calves.
This evidence corroborates posthumously the so frequently criticised hypothesis of PARACELSUS: heart heals heart, kidney heals kidney. In this case, the direct doctrine of signatures is confirmed experimentally. These experiments were later repeated by Gerhard AXMANN. They were enlarged in scope and, on one occasion, comparable cell extracts from another source were used.
These experiments confirmed beyond doubt the tests conducted by WACKER: stimulation of the protein biosynthesis in the pancreas of rats by about 50 %, using pancreas REGENERESEN from the same organ in calves. There was a certain tolerance with regard to organotropy which opens up interesting prospects.
The author then attempted to trace the possible active substances. He mixed RNA with RNase and discovered that its effect on the biosynthesis had not disappeared, but had only been reduced slightly and not very impressively. On the other hand, digestion tests with pronase P revealed that the substance's effectiveness had vanished completely after the treatment. AXMANN discussed the view that the active substances were to be found in the protein group, but with all the necessary reservations. There is, however, another possible interpretation. Could not the effective substance be a ribosomal RNA (rRNA)? These RNA are relatively micro-molecular and consist of protein and helical-built RNA. Such double-stranded RNA is protected against ribonuclease. On the other hand, the destruction of the protein component must cancel out the effect of the entire complex.

Recently, A. CURTZE demonstrated in chromatographical investigations that apparently not all rRNA have a helical structure, or that REGENERESEN rRNA consists not only of helical RNA. He discovered that there was a loss of about 16 % when RNase was allowed to act on pancreas REGENERESEN, which corresponds well with the drop in effectiveness after RNase digestion demonstrated by AXMANN in animal experiments.

In another set of tests, BETHGE and his assistants were able to show the effectiveness of bone REGENERESEN; he set artificial bone fractures in rabbits and measured the hardening of the callus with exact physical methods. The fractures' healing time was greatly reduced by the application of total bone REGENERESEN (VC 5).

The American gerontologist, Hans J. KUGLER, worked at the Roosevelt University in Chicago. In his book 'Slowing Down the Aging Process", which was published in 1973, he dealt with REGENERESEN in great depth. On page 117, for example, he reports on experiments with Snell-Bagg dwarf mice. Every so often dwarfs are produced when breeding Snell-Baggs. They have a very short life of three to five months and they owe their micro-biosis to the hypotrophy of thymus and lymphatic tissue. However, KUGLER was able to lengthen significantly the lifespan of Snell-Bagg dwarf mice by the administration of REGENERESEN. The animals were still alive after almost two years. It almost seemed as if the dwarfs had become normal Snell-Baggs. The Snell-Bagg dwarf mice are born with an immunity defect. N. FABRIS injected such mice with lymphocytes and lengthened their life considerably. He achieved the same effect when he administered a somatotropic hormone together with thyroxine. KUGLER used REGENERESEN on dwarf mice, namely, the combined preparation RN 13 in one series of experiments and lymph nodes, hypophysis and thyroid gland in another series. In the meantime, some of the animals have been sacrificed and subjected to histological examinations. The person who performed the examinations discovered that the mice treated with REGENERESEN had relatively well developed lymphatic tissue, whereas this was not the case with the untreated dwarf mice.

In the meantime, KUGLER has reported on two further tentative experiments. In the first instance, he administered REGENERESEN (RN 13) to six out of twelve sick mice suffering from an unidentified virus disease, who were hardly able to take in food or water. Five of them recovered. None of the six remaining animals survived. Was this a matter of pure chance?
The other experiment concerned breeding Sprague-Dawley rats which were considered too old for further breeding. After treatment with RN 13 they produced significantly larger litters than the untreated animals.

As regards the toxicological examinations, whereby it is necessary to reach the limits of tolerance, there are naturally pharmacological aspects involved too. Thus, v. BORMANN writes in his work "RN 13(R), a combination of heterologous, organo-specific ribonucleic acids. Examination of its compatibility in animal experiments: the rats, too, showed no peculiar behaviour during the experiment. They were lively, aggressive, their motoricity was undisturbed and their appetite good. Apart from the bites inflicted by their fellow rats, their hide was smooth and shiny, their anus clean, and their nose and eyes appeared normal. Conspicuous in the rat experiments was that the male animals treated with the preparation showed by far more aggressiveness than the control animals. This became noticeable about three weeks after the start of treatment. Prior to this, a number of the rats had bites but they were harmless and soon healed. During the scuffles in the middle of the experiment, bites were found on about half of the male test animals. These were far more serious and deeper. They healed, too, but they were replaced by new ones in the constant fighting. One gains the impression that the preparation increased the vitality and hence the aggressiveness of the experimental animals."

These finds correspond with the objective inquiry carried out by v. BORMANN on the average weight of animals treated with RN 13:

	Experimental Rats	Control Rats
09.12.69	207 g. (171-221 g.)	195 g. (180-211 g.)
16.12.69	221 g.	223 g.
27.12.69	252 g.	263 g.
26.01.70	320 g.	339 g.

It is still unclear how CAUJOLLE's observation should be evaluated.
As already mentioned, he discovered a growth acceleration in male rodents and retardation in female rodents, yet there were no pathological finds made. It can only be that RN 13 affects the metabolism. However, this does not explain the different reaction among the sexes.

Organo-specificity

A very important factor in so-called cell therapy is the organo-specificity which takes priority over their specificity to the species. One can expect to find structures with different functions in every tissue; indeed, these form the intrinsic and substantial basis of an organ's differentiation. Experience so far gained from experiments indicates that DNA in certain gene positions, which, in principle, represent or contain the code of inheritance of the entire organism, can be excluded from biosynthesis by repressors. That means, however, that the relevant mRNA are missing, which can, indeed must, guide the protein-synthesis in the direction of the special organ.

Such an organo-specificity was encountered by CACHIN, when he injected yeast RNA into diabetic rats with liver damage and compared the results with those obtained after administering pancreas RNA. This experiment revealed that there was only a negligible change after the dosage of yeast RNA, but pancreas RNA resulted in an approximately 60 % improvement. ZEMP injected uridine marked RNA from trained rats' brains into other rats. He discovered that the protein-biosynthesis was increased exclusively in the brain and not in the liver or kidneys.

Corresponding finds have also been made for the RNA in REGENERESEN. WACKER used a very representative test. He studied protein-biosynthesis by registering the rate of biosynthesis at which titrated leucine was used up. Using this test he was able to determine the biosynthesis in the pancreas of rats and compare the results with concurrent experiments employing pancreas REGENERESEN. He found that leucine was used up about 50 % faster if REGENERESEN was administered. Comparable results were not observed in the liver or kidneys. These still unpublished experiments were confirmed conclusively by AXMANN. AXMANN found that protein-biosynthesis was accelerated only in vivo, whereas in vitro the protein-synthesis was retarded by the organ extracts. The administration of pancreas REGENERESEN increased the rate of synthesis in the pancreas by about 49 %, but there was no stimulation of the protein-biosynthesis in the liver or spleen. He achieved similar results with a brain extract: increase in the brain by about 50 %, in the liver by 21 % and no increase in the pancreas or spleen. The effects of a foetal pancreas extract produced a stimulation of protein-synthesis by 4 % in the pancreas, 22 % in the brain, 19 % in the spleen and 9 % in the liver. It is clear from these experiments that there are certain tolerances with regard to organo-specificity which still require an explanation. At the 3rd spring symposium at Timmendorf Strand (1965), it was suggested that probably all cells that secrete polypeptidic hormons have a common mother cell. During the early embryonic stage, these cells wander into the digestive tract and form the entero-chromaffin tissue system. The same mother cells are also the roots of the hypophysis, the thyroid gland, the parathyroid, the chromaffin tissue system of the suprarenal medulla and the ganglia of the autonomic nervous system. This opens up fascinating prospects. Perhaps some day it will be possible to draw up a kind of taxonomy of organ cells using the methods of molecular biology.

Important factors were also revealed by the work of BETHGE et al.
They discovered that there was a significant reduction in the healing time of artificially set fractures in rabbits. Here, too, the all-bone REGENERESEN (described as VC 5) used by the authors originated from calves. In other words, WACKER and AXMANN used calves RNA on rats, and BETHGE et al. used calves RNA on rabbits. Once again, this evidence corresponds exactly with the results of "cell therapy" in animal experiments.

Mode of Action

At present, it is still necessary to recognise the reaction and effectiveness of REGENERESEN and all similar organ extracts. As experiments by WACKER, BETHGE, AXMANN and others have proved beyond doubt, the substance's reaction is to stimulate protein-biosynthesis in vivo. In the case of the experiments with pancreas REGENERESEN in Frankfurt, this effect was clearly visible in the increased incorporation of titrated leucine in pancreas protein. The experiments of BETHGE et al. revealed a significant reduction in the time of fracture healing with total-bone REGENERESEN (VC 5) and thus demonstrated the effectiveness of such REGENERESEN in animal experiments. In AXMANN's experiments with pancreas REGENERESEN, it was revealed that the degree of effectiveness is dependent on the quantity of RNA rather than that of protein. In this context, one should take the natural scientists' interpretation of proteins as relatively large polypeptides and ignore the definition of allergologists. The question now is whether the knowledge gained so far is sufficient to deduce the possible mode of action. To start with, it is expedient to reflect on the various areas where something could take place in the course of protein biosynthesis.

The first area could be that of DNA in the nucleus. According to the famous theory of JACOB and MONOD, it could appear as follows in this area: the operator gene is initially blocked by a repressor. Such repressors are generally regarded as histones, i.e. polypeptides with an unusually large proportion of basic amino-acids. If we recall the described ribosomal RNA, then these have a proven (BIELKA and TRÄGER) relatively small molecular weight, but they certainly also have a small molecular volume so there should be no difficulty in their passing through the small pores of the nuclear membrane. In view of the smallness of these rRNA and the fact that organo-specificity takes priority over species specificity, we can expect a relatively unspecific, a relatively simple mode of action. DNA and RNA are polyanions and can thus enter into simple ionogene links with the polycations of the histone. Thus, in principle, there could be competition for the bases, whereby the operon on the DNA can be released.

The second area of action are the ribosomes. According to the comprehensive description of BIELKA, experiments with E. coli have shown that the protein-synthesis on ribosomes can be broken down into several stages: "start" (initiation), "synthesis" (polymerisation, elongation) and "termination". During the start process, "an initiator factor described as F3 or C combines with an initiator nucleotide frequency (probably several triplets) of the mRNA; subsequently, this complex joins up with the small ribosome sub-unit in a reaction dependent on Mg^{2+}. In this way, the initiator code of the mRNA essential for the start of protein synthesis arrives at a certain position on the small sub-unit of ribosome. In the second stage of the reaction, the link-up

takes place of a specific initiator aminoacyl-tRNA, that is, formylmethionine-tRNA (FMet-TRNA) (the formylisation of met takes place on the met-tRNA stage by means of N10 formyltetrahydrofolic acid); this is GTP dependent by virtue of the initiator code (pApUpGp). Necessary for the link-up of this initiator amino-acyl-tRNA are the initiator factors F1 and F2 (also known as A and B). Finally, still in an Mg^{2+} dependent reaction, the large ribosome subunit is linked to this complex, probably by means of its receptor site (also known as the decoding position or amino-acyl-tRNA link-up site; position B in illustration 10 on the initiator amino-acyl-tRNA). In other words, the starting phase of protein-synthesis involves the formation of the (mRNA ribosome amino-acyl-tRNA) initiator complex, whereby the peptide chain synthesis begins with the AUG or GUG oriented incorporation of Fmet." It is recognised that at this point not even conjectures are possible. At this stage, however, attention should be paid to other difficulties. Over the last few years attention has been drawn to the nucleic acid dependent synthesis of peptides on protein matrices, that is, specific multi-enzyme complexes. Here, everything is still open to conjecture. It is hard to abandon a suspicion that, firstly, the "central dogma" of Francis H. C. CRICK is not really a dogma at all, and, secondly, relationships in micro-organisms cannot be ascribed to higher animals and plants, not to mention human beings.

The question touched on here, namely, is there also protein-synthesis without RNA?, was likewise posed by Lothar TRÄGER in his excellent "Einführung in die Molekularbiologie" (Introduction to Molecular Biology), Stuttgart, 1969. He pointed out that, under certain circumstances, the protein-splitting enzymes, the proteinases, can be forced to reverse the reaction they catalysed.

Proteins

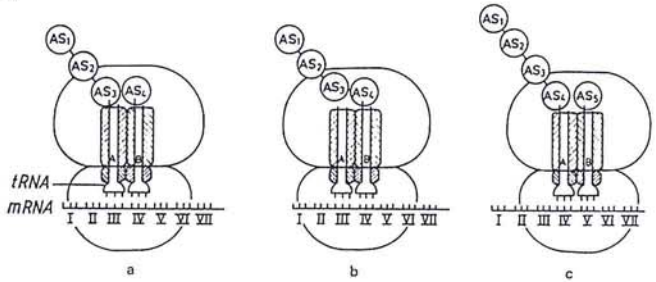


Diagram of processes on the ribosome during the protein-synthesis. (AS = amino acids; I I I with Roman figures = codons of mRNA. a → b = transfer reaction; b → c = translocation and AA-ERNA link-up.)

This so-called transpeptisation reaction produces what are known as plasteins. They have a molecular weight of generally less than 1,000 daltons. Naturally, ribonuclease has no effect here. The synthesis is ATP dependent and needs a great deal of phosphate in vitro, as was discovered in the biosynthesis of antibiotics. "In the RNA-free protein synthesis, every amino acid is initially transformed into an energy-rich adenylyl compound by means of an activating enzyme, which is not identical with the synthetases of the normal channel of protein synthesis. Subsequently, the individual activated amino acids gradually enter into a peptide combination." Later it was observed that this synthesis mechanism is also used to lengthen chains in the normal cells of mammals. Consequently, for the time being, we must retain Francis H. C. CRICK's "central dogma" which says: DNA makes RNA makes proteins.

At the level of the ribosomes, however, another hypothesis should be discussed or at least touched on here: the resonance hypothesis published by POPP et al. They refer to the experiments of EISINGER and SCHULMANN, whereby the photons of the triplet condition of nucleic acid bases can reach distances in the region of several 10^{-6} cm. Logically, they claim that the interior of the cell has relay stations, distributed at intervals of several 10^{-6} cm. throughout the extent of the cell. "Indeed, there are such cell building elements. These are the ribosomes which adhere to the cell's membrane system. In this way they fulfil the additional condition of permitting a recoilless resonance between transmitters and receivers. Furthermore, they possess helical nucleic acids, the helical rRNA. For these reasons a signal area is built up in the cell interior which embraces all the components of the cell, and we can assume that it is suited perfectly for the regulation of cell metabolism. We presume that this regulation is based on the principle of minimising the potential of the signal area - which could contain further components. In this way, for example, it would be possible to control the orderly execution of metabolic functions, such as transcription, translation, synthesis of the cell building elements or mitosis. Furthermore, in accordance with the theoretical studies of RASHEVSKYS (1959, 1960), it is claimed that the reduplication with nucleic acid components identical with the signals minimises the source of error." It is clear from this how smoothly everything runs as soon as it is in the hands of physicists. The most important factor, however, is that even in this hypothesis helical rRNA appear in the cell.

Even though impressive advances have been made in molecular biology over the past two decades, in our case theory has been overtaken by practice. The mode of action is still recognisable only in outline. But this is no cause for arguments. It would be far more intelligent to join forces in searching for the actual relationships and situations.

Consequently, it would seem justified to look around and see if other areas of research have obtained similar results.

As regards research into memory, the folllowing table is taken from the book by ZILLIKEN and ABDALLAH :-

1. Arguments in favour of RNA as a transfer factor :-

   a) Positive transfer effects through brain extracts containing RNA.

2. Arguments against RNA as a transfer factor :-

   a) The transfer can take place by means of intraperitoneal injections;
   b) RNase does not destroy the transfer activity;
   c) Molecular weight below 5,ooo;
   d) Blockage of transfer through chymotrypsin;
   e) The transfer factor is insoluble in acetone;
   f) The transfer factor is soluble in phenol.

3. Arguments in favour of polypeptides as transfer factor :-

   a) Evidence of protein in the RNA extracts, using the Folin-Ciocalteu test;
   b) The transfer factor is soluble in phenol, but not in acetone or ethanol;
   c) Molecular weight between 1,ooo and 5,ooo;
   d) Inactivation against polypeptides as transfer factor.

4. Arguments against polypeptides as transfer factor :-

   a) Negative biuret reaction in extract.

First of all, here are the arguments against RNA as transfer factor :-

a) The transfer can take place by means of intraperitoneal injections. This objection apparently takes into account the special conditions at the blood-brain barrier and is oriented towards the transfer of memory in particular. Admittedly, there are still problems in this area, but they do not concern the experiments with pancreas and bone RNA (cf. AXMANN and BETHGE).

b) Ribonuclease does not destroy the transfer ability. This objection is not valid for the helical rRNA: rRNA are, in part, double-stranded and thus can be no substrate for ribonuclease.

c) Molecular weight below 5,ooo. This argument, too, does not appear to be conclusive beyond doubt. Most probably, the helical rRNA in question have relatively small molecules.

d) Blockage of transfer through chymotrypsin. Here, too, the same applies as for pancreas and pronase P. Protein and rRNA are integrated.

e) The transfer factor is insoluble in acetone. The rRNA in question are also insoluble in acetone.

f) The transfer factor is soluble in phenol. The rRNA in question are also soluble in phenol.

There are also some criticisms to be levelled at the arguments in favour of polypeptides as possible transfer factor :-

a) Evidence of protein in the RNA extracts, using the Folin-Ciocalteu test. Here, it is necessary to refer to the work of AXMANN who employed the method of LOWRY. He came to the conclusion that pancreas REGENERESEN contain only low-molecular polypeptides. Apparently, these "proteins" belong to the helical rRNA as integrating components, as illustrated in detail above.

b) The transfer factor is easily soluble in phenol, but not in acetone or ethanol; cf. above under e) and f).

c) The molecular weight is between 1,ooo and 5,ooo; cf. above under c).

d) Not applicable.

Under 4., there are the arguments against polypeptides as transfer factor :-

a) Negative biuret test in extract. All REGENERESEN have a negative biuret reaction. This is regarded as a safety factor against the occurrence of allergic reactions.

But results have been obtained in other areas of research, too. As a result of inadequate training, there is growing concern about patients with deficient immune defence to infections in an age of antibiotics and chemotherapeutics. MUTZ and HUMPHREY at Graz children's hospital underlined the variety of possible reactions arising from man's system of immunity. The B-lymphocytes (B is derived from the Bursa fabricii of birds or from the bone marrow of humans) synthesise antibodies which react immediately in the body fluids. The lymphocytes dependent on the thymus (T-lymphocytes) are responsible for cellular defence. They are known to react as a delayed type of hypersensitivity (DTH). True, this DTH cannot be transmitted with a serum, such as the antibodies of B-lymphocytes, but it can be transferred by leucocytes. Recently, an American, Mr. LAWRENCE, demonstrated that extracts of leucocytes can convey the DTH to other animals of the same species. If one destroys the lymphocytes and breaks down their structure, one can isolate an effective principle for the DTH-transfer means of dialysis. LAWRENCE called it the transfer factor. The name is meant to indicate that the factor can transfer cellular immunity without itself being an immunogen; it is neither an antigen, nor an antibody. It has nothing to do with immuno-globulin. It influences the recipient's lymphocytes in such a way that a certain percentage of them react with an antigen response. In this way, an immunological potential is transferred from the donor to the recipient which remains effective from several months up to two years and can also serve as a donor of the transfer factor.

Here, too, the chemical nature of the transfer factor is not known conclusively. A table from the work of MUTZ and HUMPHREY indicates its characteristics.

Table by MUTZ and HUMPHREY :-

Biochemical Properties:	Immunological Properties:
Soluble	No immunoglobulin
Dialysable	Not an immunogen
Molecular weight below 10,000	Immunologically specific
No protein	Converts normal lymphocytes in vivo
Polypeptide/Polynucleotide	and in vitro
Inactivated at 56° C for 30 mins.	Effects a transformation and clonal
Resistant to pancreas RNase	proliferation of converted lymphocytes
Storable (up to five years)	through antigen exposition
	"Information molecule"

In an article by O. HAFERKAMP, "Der schutzlose Organismus" (The Defenceless Organism), there are some interesting details. The Ulm pathologist likewise bases his assumptions on present-day views of T and B-lymphocytes. "In the peripheral immune organs, the first and decisive step necessary for an immune response is the reception of antigen material, in the shape, say, of a bacteria or a virus, by macrophages, whereby apparently a contact with ribonucleic acids is necessary for the transmission to B and T cells." This reference also tallies with the opinion expressed here.

Toxicology

The first experiment conducted on the toxicology of REGENERESEN was published by GOOSSENS and GASTPAR in 1960. To start with, they investigated the question of sensitisation through intraperitoneal injections of guinea pigs, and acute and chronic toxicity through intravenous injections of rabbits. In addition to the usual general criteria (manifestations of life, increase and decrease in weight and appetite, etc.), the following blood values were measured at various intervals during and up to six months after the series of injections: blood sedimentation rate, haemoglobin, differential blood count, thrombocyte count, prothrombin clotting time, and recalcification time. The prothrombin clotting time should facilitate the detection of any liver function disturbances. Together with the recalcification time, it is also a suitable method of controlling the clotting system. Some of the animals were killed and examined histologically immediately after the end of the series of injections and others after one or several months.

In the case of the sensibilisation experiments with intraperitoneal injections of up to 2 ml. of REGENERESEN from lungs, liver, spleen, kidneys and suprarenal gland, the twenty guinea pigs involved showed no signs whatsoever of any allergic reactions.

Since it had become clear meanwhile that "no different results were to be expected when using REGENERESEN from other organs, we examined an R mixture*) of ribonucleic acids from the following thirteen organs: 1. placenta; 2. testicles; 3. ovary; 4. hypothalamus; 5. suprarenal cortex; 6. liver; 7. spleen;

*) later called RN 13

8. cerebral cortex; 9. thalamus; 10. kidneys; 11. heart; 12. intima; 13. hypophysis. Even when rabbits were injected daily over several weeks with small and also very large doses, no anaphylactic reactions occurred. During and after the period of the experiment, the animals increased in weight, and their appetite and other manifestations of life differed in no way from those of the control animals."

The authors also conducted the examinations for acute and chronic toxicity on rabbits. "Up to 20 ml. per animal (equivalent to 4.5 ml/kg) were injected once into fifteen animals, none of which showed any reaction. Employed were REGENERESEN from the lungs, liver, spleen, kidneys and suprarenal gland. A further eighteen animals were tested with the above-mentioned R mixture, containing an additional nine ribonucleic acid solutions, using the same procedure."

"The examination for chronic toxicity (20 animals) stretched over more than four weeks and involved five injections per week with a total amount of approximately 115 ml. per animal. Employed were REGENERESEN from lungs, liver and kidneys, and the mixture of thirteen REGENERESEN. Both during and at the end of the injections no clinically recognisable, toxic reactions were observed. There were also no pathological finds in the venous blood. Merely the haemoglobin count of most of the animals rose during the period of the examination, as did their weight by 10 to 20 %.

Whereas the control animals also increased in weight when given the same food, there was no rise in their haemoglobin count. A dissection of the animals and subsequent histological examination of the lungs, liver, spleen, kidneys, suprarenal gland and, in part, the ovaries and heart muscle revealed no pathological changes pointing to the toxic effect of the preparation.

"If one were to translate these extraordinarily high individual and total doses used into those that would have been used on a human being, then they correspond to a total amount of 2,000 ml. of the marketed product, or 400 injections of 5 ml. Consequently, we can presume with almost complete certainty that therapeutic doses can be administered to human beings (approx. 2 to 5 % of the tested amount used on animals) without causing any harm. Animal experiments have thus confirmed the information provided by the manufacturer that over 200,000 ampules have been administered without any harmful side effects." (1960)

REGENERESEN are based on substances also present in the human body. Consequently, there is little likelihood of them producing secondary effects. All the same, particularly thorough investigations have been carried out to check this assumption.

RIETSCHEL writes: "In contrast to treatment with cells, where, in general, no more than two to three ampules of dried cells should be used, large amounts of REGENERESEN can be administered without any danger. ..... On no single occasion have we observed any noxious actions, above all, no allergic or ana-

phylactic reactions after dosages of the same organ. Our experience so far would seem to indicate that this method of treatment is largely or completely harmless."

As regards the combined preparation RN 13, an experiment was conducted by Prof. F. CAUJOLLE and published on 7th May, 1966. Professor CAUJOLLE is an "Expert Pharmacologue Toxicologue Agréé par M. le Ministre de l'Action Sanitaire et Sociale" and a member of the "Faculté de Médecine et Pharmacie de Toulouse". He divided up his very thorough experiments into two groups :-

Examinations of possible damage caused by a single dose; long-term examinations with repeated doses.

He conducted his experiments on mice, rats and dogs. These painstaking tests, which lasted up to seventy days, cannot be described in detail here due to lack of space. Interesting and important are the conclusions Prof. CAUJOLLE drew from his experiments :-

"1. RN 13 showed no direct noxious actions;
2. RN 13, when administered repeatedly, stimulates the growth of male rats and mice, but checks the growth of female rats and mice (tests with enteral intake over seventy days). It produced no anatomical pathological changes, at least with the doses used for the duration of these experiments."

The dose was 1 ml. per day for both animal species. In the case of the dogs and intravenous injections, there were no changes in blood-pressure or breathing observed.

These experiments are of particular significance on account of the large number of organ REGENERESEN. They were repeated by Prof. v. BORMANN. His experiments on rats and mice lasted up to fifty days. They revealed no "injurious or toxic actions." As compared to the control animals, the body weight was slightly lower, especially among the rats; from pharmagological aspects, this must be interpreted as a sign of increased metabolism and activity during the experiment. The rats received ten to twenty times the human dosage, the mice one hundred to two hundred times the amount. "In our opinion, the results obtained in our animal experiments indicate the harmlessness of the test preparation also for humans. There was evidence of toxicity neither in the acute nor in the long-term experiment." One observation of the authors must be evaluated as a pharmacological reaction and a clear reference to the efficacy of the preparation. "Conspicuous was an increase in aggressiveness, and hence of vitality, among the male rats treated with the preparation."

Toxicology, as concerns the total-bone REGENERESEN (trade name REGENERESEN VC5) prepared for Prof. BETHGE and his experimental treatment of fractures :-

It contains ribonucleic acids from the periosteum, bony substance, endosteum,

bone marrow, osseous tissue with interosseous vessels and ribonucleic acid from yeast.

In acute experiments conducted by Prof. LEUSCHNER on Sprague-Dawley rats and using intramuscular administration, the LD50 (seven days) was higher than 5.04 ml/kg. The lowest toxic dosis was likewise more than 5.04 ml/kg. There was no point in testing higher dosages "because the large volume would have led to substance-non-specific intolerance reactions". There was no indication of any incompatibility reactions. For about thirty minutes there was a slight local sensitivity to pressure. This reaction also occurred when the same amount of physiological NaCl solution was used. The same REGENERESEN combination was administered intravenously to rats of the same origin. In this case, they tolerated 50.4 ml/kg of body weight. Consequently, the LD50 lies above 50.5. The same applies to the lowest dosis. When 50.5 ml/kg of VC5 were administered intravenously, the animals showed slightly ruffled coats but were otherwise perfectly normal. Small haematoma formed at the point of injection, but these were also observed after the application of the same amounts of physiological NaCl solution. The dissection of the animals produced no specific pathological finds.

No influence was observed after a single intramuscular application of VC5 on mongrel dogs in dosages of 6.35, 7.90 and 10 ml/kg. For about thirty minutes after the application the animals showed a slight local sensitivity to pressure, as was observed with the same amounts of physiological NaCl solution. Investigations with higher dosages would have been meaningless. An examination of behaviour, salivation, vomiting, body temperature, intake of food, the pupils, breathing, the E.C.G., faeces, urine and body weight produced no indication of incompatibility. The subsequent dissections revealed no pathological finds. Toxicological tests were carried out in the same way with intravenous intake. The dosages were the same and the finds corresponded exactly with those for intramuscular application. It was also impossible to ascertain the lethal dosis of VC5 for intravenous application.

Recently, LEUSCHNER carried out fetotoxicity and tetratogenesis tests on rats, using the same preparation. The pharmacologically formulated result is: "Under the experimental conditions available, we can expect the lowest toxic dosis for the mother animals and foetuses to be above 3 ml/kg for intramuscular injections. There was no indication that the substance produced a teratogenic effect. At this point, one might add that fetotoxicity and teratogenesis could hardly be expected of such low-molecular substances. To repeat it once again: Ribonucleic acids consist of adenine, cytosine, guanine and uracil, of ubiquitous sugar ribose and phosphoric acid. Noxious action is therefore out of imagination."

Dosage and Mode of Application

The choice of a particular REGENERESEN is dependent on the clinical picture and the desired stimulation of organ protein biosynthesis. Naturally, it differs in each case. Focal point of the therapy is the tissue which is indicated by the diognosis and the symptoms. Sympathetic affected organs should not be ignored. Degenerative lesions are generally caused by the failure of one or more organs' regenerative powers. Frequently, this can result in a disturbance to the functions of other organ systems. (Life is characterized by a meaningful interplay of all the tissues.)

Professor DYCKERHOFF has drawn up a list of indications and recommended therapies (cf. pp. 75), in which "primary" REGENERESEN are those that are organotropic for primarily disturbed organs, and "secondary" REGENERESEN those that are earmarked for organs also affected. However, this survey cannot be regarded as binding; it is essential to reflect deeply on the clinical picture when choosing the right REGENERESEN. The following method has proved its worth in many years of experience: selection of the individual REGENERESEN according to the diagnosis, yet taking into account the clinical symptoms, course and duration of the illness.

As regards the dosage, this must often be determined by carrying out tests in each individual case. So far, there are no methods of recognising the activity of ribosomes in biosynthesis. Particularly important, however, is the fact that all our experience gained to-date indicates that there is no chance of any damage caused by REGENERESEN.

The individual dosage is determined by the severity of the disease, the number of organs involved in one syndrome and the observed tendency to heal, to mention only a few.

In practice, this would signify that 5 to 10 ampules are recommended for a "primary" affected organ. If there is a demonstrated toleration of the RNA effect, which stretches to yeast RNA, the number of ampules for the "secondary" disturbed organs can lead to a reduction in the number of ampules for the "primary" affected organ. This means, for example, that the number of parathyroid REGENERESEN is of chief importance in the case of tetany; in other words, 5 to 10 ampules would be needed, but if thyroid gland, diencephalon and anterior lobe of hypophysis are administered simultaneously then 3 ampules of each should be sufficient for the initial treatment.
Every other day, up to four 5 ml. ampules can be administered, depending on the individual case. REGENERESEN are miscible as desired.

If the previous clinical picture suggests the combination of 10 different organ REGENERESEN for a course of treatment, practical experience has shown that the injection of two ampules every other day, e.g. Monday, Wednesday, and Friday, is expedient. All REGENERESEN can be administered as outpatient

treatment. Confinement to bed is unnecessary.

Children's Dosage: In the case of children, the dosis of essentially non-toxic REGENERESEN should be based on general paediatric rules.

Repeated Series of Injections: It is clear that one series of injections - especially when serious disturbances are present - is inadequate, and that it might have to be repeated, possibly in conjunction with further "secondary" REGENERESEN. It is recommended that the degree of effectiveness should be measured by the treatment's success after two weeks, and that the next step be determined by one's own observations (controlled clinical trial).

In other cases, for example, labyrinthine deafness, the daily administration of one ampule of AU 4 and placenta of the same sex respectively on ten consecutive days has proved successful (GAUS).

The abbreviations "masc." and "fem." mean that the organs were obtained from male or female foetus or young animals. Placenta "masc.", for example, nourished a male foetus. REGENERESEN with the designation "masc." or "fem." should always be used on the same sex. It is expedient and advisable to take into account the importance of the vegetative nervous system for the entire course of a person's life and thus administer, in particular, diencephalon (thalamus and hypothalamus), midbrain and anterior pituitary gland (of the same sex). In numerous diseases the vegetative nervous system is involved. Experience has shown that a REGENERESEN therapy in the event of a diseased intestinal tract is most successful if a combination of diencephalon, midbrain and pituitary gland REGENERESEN is used.

Application

Generally speaking, REGENERESEN are injected intramuscularly into the upper external quadrant of the glutaeus. Experiments on animals have shown that oral administration results in the decomposition of RNA in the gastro-intestinal tract, so that the effect is doubtful. GORDON achieved the greatest success with intramuscular injections.

Side Effects and Concomitant Phenomena

None have been observed with REGENERESEN. The hyaluronidase ampule should not be applied during an OSTEOCHONDRIN therapy, if allergic anamnesis is indicated.

Contra-Indications

Gout (disturbance of the purine metabolism). (KOTZ et al.)
Hyaluronidase should not be injected into infected tissue or malignant tumours.

Specific Notations

Antibiotics (for inflammatory bacterial diseases and septic processes),

whose mode of action originates from an inhibition of the protein biosynthesis, treatment with cytostatic drugs (immunity suppression) and high-energy (ionising) rays may reduce the efficacy of the REGENERESEN. (TRÄGER, BECK AND KRAHL, FLEXNER, STUDZINSKI, FLAMM, BARONDES AND COHEN, NEUBERT, GREENBERGER, to name but a few)

Clinical and Practical Experience

1. In cases of degenerative processes and disturbances of the protein biosynthesis, the clinical application of REGENERESEN produced extremely favourable results, which are in accordance with similar cases described in international literature. (4) (16) (17) (18) (20) (22) (29) (39/40) (44)

2. There has never been any evidence of damage caused by REGENERESEN.

3. Even the administration of large amounts and frequently repeated injections of REGENERESEN (20) (22) has caused no damage, whereby the leading medical principle of

   nil nocere

   was ascertained.

4. REGENERESEN remain stable and retain their biological activity for several years, thus they can be kept for such periods. Tests have proved their sterility and their non-pyrogenic nature.

5. Ribonucleic acids (RNA), in the form of the various organotropic REGENERESEN according to Prof. Dr. H. Dyckerhoff, are effective and harmless therapeutic agents for a "revitalisation" in cases of degenerative processes and protein dysbolism.

   The "translation" of a theroretically long since proven step in protein biosynthesis into a therapy for application in human medicine is - naturally, one is tempted to say - very difficult. One is reminded of Galileo GALILEI's famous words: Eppur si muove! (Nevertheless, it does move.) Unfortunately, therapeutic ambitions among physicians vary considerably. In hospitals there are patients who have been ailing for years; the practitioners cannot deal with them on their own, or they are wary of embarking on their own treatment - which is only understandable in view of the present exaggerated legal and journalistic attitudes. Everyone knows only too well how much he can take.

   Furthermore, hospitals - even today - are more interested in a brilliant diagnosis than in a frequently almost impossible therapy. But the therapeutic concept also has characteristics which it is unwise to overlook if one wishes to evaluate correctly the future of therapies. Everyone is aware of the clinician's nightmare, which can be summed up in the words "mean clinic sojourn".

   Consequently, every effort must be made to restore the health of a patient to such an extent that he or she can be released from hospital with a clear conscience in view of the feared explosion bill which is threatening hospitals. As a means of promoting modern medicine, particularly effective agents present themselves constantly. One day, however, the ideal situation will be achieved - or rather what appears ideal to the young Aesculapius with a scientific bend - namely, the healing of a disease against the

will of the patient. In other words, there will be a growing neglect of the patient's bodily cooperation in his or her recovery, with the accompanying lack of activity of endogenous resistance and the increase in frustration.

The composition of REGENERESEN is based on a completely different approach to medicine. They are meant to make available to the body ribonucleic acids which initiate the translation in the organs' ribosomes. Translation means transfer of the four letters of the nucleic acids adenine-thymine (uracil) and guanine-cystosine from the code into the twenty letter alphabet of amino acids. Naturally, the correct treatment for each individual case is very important. As a result, it is still very difficult to find enough cases to draw up reliable statistics.

Therefore, this publication must also have the task of promoting ribonucleic acids, so that in the not too distant future there will be sufficient material available for a statistical evaluation. However, there are already some practitioners who have devoted so much attention to REGENERESEN that a report on "Therapeutic Experiments with Organo-Specific Ribonucleic Acids" could be published.

ELSEN (16) reported on 33 cases with different indications, whereby he achieved favourable results in 26 cases. The results were not to his satisfaction in seven cases. However, all the patients had serious ailments: one bullous emphysema, one serious coronary-artery insufficiency, one diabetes mellitus requiring insulin and one case of impairment of hearing - and it is well known how difficult it is to carry out an exhaustive diagnosis. The latter patient told her doctor spontaneously after three months that, contrary to earlier observations, her condition had not further deteriorated. Naturally, one can expect REGENERESEN to be effective only if the necessary possibilities are present.
This means in our case that there must still be an adequate number of sufficiently intact and appropriately active ribosomes in the organ cells, so that a protein biosynthesis can be initiated which is suitably therapeutic.

In the treatment of arthrosis with OSTEOCHONDRIN, vertebral discomfort initially increased substantially in all ELSEN's cases, so that only two injections per week were possible. However, there was an amelioration in the conditions of pain - which required constant treatment - after the administration of OSTEOCHONDRIN, which lasted for at least three months - without the application of other drugs.

In the case of gout, with an increase in uric acid of 8 mg%, the process flared up again after the administration of RN 13. There would appear to be an easy explanation for this: the purine base of the nucleotide can be regarded as a supplier of uric acid. Consequently, REGENERESEN should be used cautiously in cases of gout.

ELSEN describes the case of a 40 year old female patient from his own family who suffered from an extrasystole that was completely resistant to all forms of therapy. After five injections of RN 13 she was completely free of the complaint for six months. According to ELSEN, general climacteric complaints also improved.

The author pointed out, in particular, that treatment with RN 13 had caused regression of very painful mammae in the postclimacteric period, whereas he

was not fully convinced that there had been an improvement in the hot flushes.

Any attempt to draw conclusions from case histories obtained so far should not be too extensive if the reader's interest is to be maintained. Consequently, we have selected those cases whose characteristics rule out the possibility that the results were merely accidental.

Let us begin with the

I. Nervous System

Prof. Dr. Hollwich, MS 13.6.72: "In Frankfurt, Prof. THIEL (41) treated two patients suffering from angioid streaks with the REGENERESEN-Dyckerhoff preparation and achieved remarkable successes. The results were reported on briefly in the book "Therapy of Eye Diseases" (G. Thieme Publishing House, Stuttgart, 1970)."

Taken from "Therapie der Augenkrankheiten mit diagnostischen Hinweisen - Fibel für Praxis and Klinik" (Therapy of Eye Diseases with Diagnostic Hints - Introduction to Clinical and Practical Work) by Rudolf Thiel. Supplemented by Fritz Hollwich. Georg Thieme Verlag, Stuttgart, 1970.

Page 491: Angioid streaks (KNAPP) with pseudoxanthoma elasticum (GRØNBLAD-STRANDBERG syndrome).

Page 492: Due to the 'healing" of two patients with typical angioid streaks, who were observed over several years, here is a brief report :-

"Injected were several types of REGENERESEN DYCKERHOFF (chorioidea, connective tissue, intima, placenta and retina). Remarkable was that during this treatment no more bleeding occurred, the vessel-like streaks became narrower, pigmented in part and even disappeared. It is not yet possible to reach a definitive opinion about treatment with REGENERESEN, but tests are to be recommended."

GAUS (17) reported in his joint publication with DYCKERHOFF (17) that by administering special REGENERESE AU 4 he was able to improve noticeably the hearing faculty of three patients with labyrinthine deafness. The ability of hearing was measured audiometrically. In a later work in conjunction with Afife ISNEL (18), GAUS described the case of a 17 year old patient whose hearing had deteriorated markedly after a bout of mumps.

Parkinson's Disease:

Let us now turn to a disease which causes serious difficulties for old people, renders them unable to work and frequently puts them in need of care: the Parkinson syndrome. Parkinson's disease has no fixed clinical picture: here similar symptoms with different aetiologies are grouped together, for example, Parkinson's disease caused by old age which is based on arteriosclerosis (this is the cause in the majority of cases), or post-encephalitic Parkinson's disease, to mention only a few of the possible forms.
The common denominator underlying this syndrome is damage in the region of the corpus striatum.

The effectiveness of REGENERESEN was demonstrated in the following cases :-

For the past two years a 73 year old patient had been suffering from the Parkinson's syndrome (15). Based on a progressive brain-stem arteriosclerosis, the disease had not responded favourably to any of the customary medicines. As a result of serious word-finding trouble the patient's condition deteriorated steadily, although he was mentally alert. He thus suffered greatly under these symptoms. Lack of drive, disequilibrium, depressions and the typical trembling were regarded as particularly tormenting. Injected on 6th June 1957 were one ampule each of cerebral cortex, cerebral medulla, thalamus, hypothalamus and male placenta. A marked improvement took place 3 1/2 weeks after this injection; the bodily impulses returned; it was easy to converse with the old gentleman and he again went for solitary walks in the town and countryside.

H. Sch., patient, 75 years old, Parkinson's disease caused by arteriosclerosis (20). In accordance with the Abderhalden reaction, two ampules each of cerebral medulla, corpus striatum, spinal cord, spleen, gastric mucosa, testicle and placenta were injected on 31st May and 1st June 1956. At a follow-up examination on 28th August the trembling had improved somewhat, but the patient's general state of health had not improved.

Franz K., 64 years old, outpatient treatment on 26th September 1955, later clinical treatment from 17th to 24th October 1955. Parkinson's disease probably caused by arteriosclerosis (39). Injection of placenta and testicle REGENERESEN on 18th October 1955. He was given three ampules of each during the course of three weeks, that is, a total of six. Remarkable success of treatment after six weeks: he could walk more easily than previously, the trembling had decreased and his general state of health had improved.

A female patient with an old encephalitis disseminata and paralysis of both legs (15) was given cerebral medulla, corpus striatum, thalamus and hypothalamus REGENERESEN. Five weeks after these injections the positive Babinski's reflex on both feet disappeared and remained negative - a fact which medical colleagues found most remarkable.

Mrs. A., patient, 63 years old, diagnosis of sclerosis, Parkinson's disease and latent coronary-artery insufficiency (31). Since 1970 there had been a mounting stiffness, hypokinesis, trembling, psychic changes, disorientation, weak concentration, thought disturbance, hallucinations, restlessness and latent coronary-artery insufficiency. No improvement was achieved with clinical treatment. Tests were made with REGENERESEN from July 1973 onwards: one ampule each of heart, intima and thalamus between 28th July and 3rd August 1973; one ampule each of cerebellar medulla and thalamus in October 1973; one ampule each of RN 13 and pancreas in November 1973; one ampule each of cerebral cortex and thalamus in January 1974; one ampule each of intima and artery in February 1974; one ampule each of RN 13, cerebral medulla, cerebral cortex, intima and cerebellar medulla in May 1974; one ampule each of artery, intima, thalamus and RN 13 in October 1974; and one ampule of RN 13 in December 1974. After every series of injections there was an improvement in the stiffness, thought disturbance, hallucinations and general state of health. There was no increase in weight. A new series must be administered every three to four months to prevent any deterioration.

H. Kl., patient, 49 years old, caught influenza in 1946 which he said was accompanied by serious headaches (15). However, he was perfectly fit after a

short time and able to work again. In 1950, he had motor disturbances in the right arm for the first time. If he wanted to grasp something, strech or bend his arm, it did not immediately respond and there was a delay of a few seconds, or his arm suddenly made movements of its own when he was writing. After about six months, this anomaly appeared in his right hip and leg. The condition deteriorated until he was unable to walk. Examinations by Prof. Dr. Tönnis, Prof. Dr. Scheidt and Prof. Dr. Schürmeier revealed no pathologic-organic finds whatsoever. A renowned neurologist in Darmstadt examined the patient again in 1956 and produced the diagnosis: disturbed conduction in the brain centre, possibility of Parkinson's disease. I examined him myself in April 1957.

Since no Abderhalden reaction test had been carried out to-date, this was conducted to cover all the organs. The results revealed that there was a marked malfunctioning of the cerebral and cerebellar cortex, as well as inside the brain stem and bone-marrow. After an evaluation of the total finds, placenta, brain stem, cerebral hemispheres, little brain and bone-marrow REGENERESEN were administered, that is, 2 ampules at each visit.

After only eight ampules, the patient could speak and walk more easily so that it was even noticeable to outsiders. His limbs reacted faster and an impotence of many years' duration disappeared. The patient was also able to drive a car again after completion of the series of injections.

The effect of the treatment lasted for three months, when hindering in walking again occurred and the patient explained that the paralysis was travelling outwards from the back once more. At the patient's request, REGENERESEN were again administered, but this time four ampules each of brain stem-cerebellum, bone marrow-cerebral hemispheres, etc. at one and the same occasion. The sensations disappeared and the patient was well again after the administration of four ampules of brain stem. The improvement had continued when the patient was re-examined four months later.

E. W. patient, 30 years old, housewife, first experienced feelings of weakness in the knees at the beginning of 1955 (15). Her legs gave way whilst walking, so that she fell forward and injured herself. Neurological examinations of all kinds produced no results. The customary sedative therapy failed and sometimes the woman's knees gave way whilst she was standing and she fell to the floor. The first visit in August 1956. A comprehensive AR test showed noticeable disturbances in the region of the brain stem, the cerebellum and the spinal cord, whilst the motoric centres of the cerebral cortex appeared to be undamaged. Her walking ability returned to normal after the administration of the indicated REGENERESEN. Today, the woman is able to walk long distances without any discomfort or feelings of anxiety.

In all these cases, the injection of placenta REGENERESEN of the relevant sex proved valuable as a basic therapy so to speak.

Multiple Sclerosis

A perusal of the latter case (Mrs. E. W., 30 years old) would seem to indicate the first signs of multiple sclerosis. This multi-faceted clinical picture can at least be improved substantially by administering REGENERESEN (15).

Encouraging reports from the United States and the Federal Republic of Germany are available. However, the period of observation is still too short to make any conclusive statements. An observation period of five years is essential on account of numerous spontaneous remissions that characterize this clinical picture.

R. A. patient, age 20, female sex, nat. American, drug used: REGENERESEN, diagnosis: multiple sclerosis (15). History (important conditions): numbness and weakness of right side of her body including the face, arm, trunk and leg; eyes tired; unable to walk or use her right arm or hand; had to give up her work. Was seen by a prominent New York neurologist who diagnosed multiple sclerosis with a very grave unfavourable prognosis. Rather abrupt onset following the pushing of her car; seven weeks' duration.

Examination (important findings): hands and feet cold and clammy; right arm, hand, leg and foot tire quickly; almost no use of either. B.P. 144/96; some numbness to light touch of right side of body including arm and leg.

Laboratory: comp. blood chem. - slight anaemia; sed. rate 41; WBC 8, 200; blood sugar 78; uric acid 5.6; pap. cervical smears - negative.

X-rays: sinuses - slight clouding of both antra, otherwise negative.

Progress: had one course of REGENERESEN injections; B.P. dropped to 140/84; 124/80; 120/80. Sed. rate dropped to 24 - then 12. Numbness and weakness of right side of body, coldness and clamminess of hands and feet completely disappeared. There has been a recurrence of the coldness and clamminess of the hands and feet, but additional placenta injections relieved this again. Since completing these injections she has married and become the mother of a fine normal son with no ill effects. Results: excellent.

Note: this case makes me suspect that REGENERESEN would be very valuable in multiple sclerosis if the cases could be treated early enough.

P. D., patient, child, diagnosis: spastic paralysis (31). Parents: belong to a sub-group of the rhesus factor (inconclusive). Mother has narrow pelvis. About one year after the birth, the mother had diffuse lymphomatosis, Sabin Feldmann and complement fixation reaction slightly positive (test for toxoplasmosis). Child is spastic, otherwise has only slight difficulty in making human contacts. On 3rd January 1973, the child was given total little brain and cerebral hemisphere. At intervals of three months, this REGENERESEN was administered four times successively. The parents noticed that the child was far more relaxed after each application and completed the special gymnastics with greater success. The child had no difficulties at school, but it had to take part in the special gymnastics for spastic children.

II. Heart and Circulation

Placenta and spleen REGENERESEN (6 ampules all told) were able to improve the condition of a 41 year old man with serious status asthmaticus for just under one year, during which time there were no fresh attacks (39).

Elisabeth W., 39 years old. Examined on 21st August 1956. Diagnosis: compound valvular defect and general adynamia (40). History: had a serious valvular defect in the heart (combined valvular defect), in 1952 there was a bundle-branch block in the ECG, suffered at that time from vertigo and was no longer able to do the housework. From the husband it was learnt that the patient also suffered from depressions: for the past few years she had spent the whole day reading from the Bible, went to church constantly, was incapable of undertaking anything, became extremely thin because she ate so little, withdrew from her environment and often spent days lying in bed. Her intellectual interest decreased markedly and she was eventually devoid of any drive whatsoever. An extensive valvular defect with spreading of the heart was confirmed at the examination on 21st August 1956.
On account of the dangers inherent in cell therapy, the patient was given three ampules of placenta REGENERESEN and three ampules of muscle REGENERSEN. For about six weeks there was no change in the patient's poor condition, then there was a sudden improvement, a spontaneous desire for information and her general interest increased. Her skin, which had been dry for years, began to perspire freely again. Her bouts of depression virtually disappeared and she again had normal sexual desires after having had no sexual needs for over eleven years.
We learnt from her husband that she had been given no other drugs besides REGERESEN, two ampules of which were administered weekly.

A. W., patient, 66 years old, arteriosclerosis, disturbed circulation of legs, apoplectic fit with slight paralysis of the right side (20). Abderhalden: cerebral marrow 2, cerebellar medulla 1, thalamus 2, liver 1, spleen 2, heart muscle 3, internal vessel coat 3 and hypothalamus 2. REGENERESEN injections on 19th and 20th April 1957: twice cerebral medulla , twice cerebellar medulla, twice thalamus, twice spleen, three times heart muscle, three times intima and twice placenta.
The patient felt much better from the middle of May onwards, was able to walk without a stick and his friends noticed that he was more alert, both mentally and physically.

H. W., patient, age 65, male, Swedish nationality, drug used: REGENERESEN. Diagnosis: arteriosclerotic heart disease (15). History (important conditions): patient came to me on 9th December 1956 complaining of light-headedness, dizziness and lower backache and gas after eating. On examination, a loud rough systolic murmur at the aorta was heard. His brother and sister-in-law with similar conditions had been under treatment for the previous 2 years with moderate improvement and at considerable expense. He elected to try the REGENERESEN injections.
Examination (important findings): B.P. 160/90; pulse 84; heart slightly overactive; heart definitely enlarged and base widened; rough systolic murmur at the aorta and slightly less loud and rough at the tricuspid area.
Laboratory: CBS negative. X-Rays: fluroroscopy of chest confirmed the above findings.
Progress: had one complete course of REGENERESEN injections: B.P. dropped to 120/80; heart murmur grew definitely less; size of heart decreased somewhat; heart action improved; low backache cleared; dizziness cleared.
He has continued to feel well since then, with B.P. staying at 120 - 130.
Signs of toxicity: none.
Results: very good.

Central and Peripheral Circulatory Disturbances (4).

One group of patients, with ages ranging between 60 and 70, appears of particular importance to us, because the common syndrome of vascular and circulatory defects means that the still employed patients are no longer able to carry out their work satisfactorily and thus lose their enjoyment of life. At this age, media and intima changes in the vessels attack almost all the body's organs one after the other. Local changes, for example, to the extremities, show quite clearly how the oxygen deficiency in some specific tissue results in a vicious circle. Particularly useful in such a case is the administration of placenta, vessel and spleen REGENERESEN, etc. After such a treatment there is a marked increase in intellectual powers and muscular locomotion, as can be seen from the following examples.

In the case of a 65 year old business man, his 35 year old wife complained that he had become lethargic and indifferent. The patient himself did not deny this. Symptomatic therapy was unsuccessful. B.P. 115/70, ESR. 5/8, weight 83.5 kg. On 11th and 29th March 1957, 3rd and 17th May and 12th June 1957, he was given successively heart, placenta, suprarenal cortex, brain stem, testicle, prostate gland and urinary bladder REGENERESEN. He took a seaside holiday from 25th July to 25th August. His wife was very pleased with the success; her husband returned home refreshed and attentive, and was again very active at work. Several check-ups showed that his blood pressure had stabilized at 130/95 BP.

Patient W., 61 years old, house-property manager, was treated in 1954 with fresh tissue from heart, placenta, testicle and liver on account of angina pectoris, hypotonia, intermittent claudication and a pronounced arteriosclerotic psychological change with a tendency towards irascibility, depressions, suicide intention, neglect of clothing and disturbances of sleep, etc. Afterwards the patient began to look up. He moved to the United States where he was a successful businessman. He returned after two years, allegedly because he was to inherit property here. It emerged, however, that his former complaints had reappeared and he was again unable to work and do business. In December 1956, a blood pressure of 165/110 and a weight of 59 kg. Signs of coronary-artery insufficiency in the ECG. He was given REGENERESEN: heart, placenta and cerebral medulla. After four weeks, heart, intima and testicle. After a further four weeks, heart, placenta and liver. On each occasion there were signs of exhaustion, shivering, and tiredness for three to four days. Redness with itching at the site of the injection. In March, a blood pressure of 140/100 B.P. Weight of 61 kg. Patient took on a job in an electro-engineering company, can walk well and leads a gay social life. We have described this effect as an anamnestic reaction. In this case, neither glucoside nor any kind of symptomatic drug were administered to the patient.

Patient K. Sch., 66 years old, diagnosis: intermittent claudication, osteochondrosis, spondylosis and ischialgia (31).
First symptoms of intermittent claudication about seven years ago: virtually

no pulse on the back of the foot. Labyrinthine deafness (diagnosis: Prof. Feldmann, Heidelberg), osteochondrosis and spondylosis, nocturnal ischialgia, excited easily and growing forgetfulness.
Blood pressure fluctuated between 175/100, no serious pathological finds in the blood from the liver or kidneys, no diabetes. An arteriograph taken about seven years ago showed stenoses of around 3 to 5 cm. in length in both the thigh and lower leg. Initially, the therapy was to treat the patient with all the customary medical agents, hydrotherapy and homeopathy.
The patient was urged to check exactly the length of his walks without any stops and to report to me immediately if they were shorter. At the beginning of December 1974, his usual walk was shortened abruptly, he suffered from fits of giddiness, conspicuous and irritating forgetfulness. Treatment with one ampule each of total little brain, cerebellum, artery REGENERESEN and OSTEOCHONDRIN. Due to his poor condition, he was given intracutaneous injections of about 1/2 ml. at home; after waiting about thirty minutes all four REGENERESEN were administered. The patient was advised to go to bed for half a day and refrain from taking alcohol for three days. There was such an improvement in the period leading up to Christmas that the patient, a building contractor, had no time to visit me during consulting hours. He explained to me on the phone that he was still very forgetful, but that he could now deal with his work and, above all, carry out normal inspections of the building sites without a walking stick. On 11th April 1975, he was given the same injections as in December 1974. On 26th May 1975, his wife visited me on account of another matter regarding herself, but she was very happy because "he" was almost his old self again and no longer so irritable. At Easter they were able to take long walks in the Allgäu mountains, he drove the whole way there and she no longer had to accompany him constantly - as a kind of note-taking secretary - also at work because of his forgetfulness, so as to make sure that nobody noticed what a bad state he was in. Both of them want him to undergo a genuine, long-term treatment. Consequently, he will be given doses of REGENERESEN every two months; however, on the next occasion, he will be subjected to a medical check-up and there may be a slight variation in therapy.

Endangitis obliterans

B. A. - Dr. B.: 73 years old, male, hypotension (100/50 mm. Hg) and bronchitis caused by an emphysema of the lungs (15). A fast spreading atrophy and painful ischialgia of the left leg with serious circulatory disturbances (intermittent claudication) since the end of 1954. An arteriograph showed the complete closure of the sin. femoral artery with a poorly developed collateral circulation. No significant improvement in the circulation was achieved with the customary therapy of digitoxin, Ronicol compound(R) and repeated insufflations of oxygen. The results were no better after paravertebral impletol injections along the sympathetic trunk. REGENERESEN was injected due to the danger of gangrene and a possible amputation.

3rd February 1956: 3 injections of intima, 3 of masculine placenta, 2 of testicle, 2 of heart and 2 of hypothalamus. After eight days, 2 injections of prostate gland and 2 of lung (10th February); after a further eight days, (i.e. 17 days after the first injection) 2 injections of prostate gland, 2 of lung and 2 of hypothalamus. After only four days the leg was warm throughout and the patient was able to walk about his home without any pain. On 10th March 1956, B.P. of 110/60 mm. Hg. No pain in the leg, also after short walks.
29th March 1956: patient in a good state of health, has no pain and can go on short walks. 26th April 1956: patient completely devoid of pain in the heart and lung regions, abel to move freely and bear substantial loads.
7th May 1956: 3 injections of masculine placenta, 3 of intima, 1 of suprarenal cortex, 1 of heart and 1 of hypothalamus in order to ensure the effectiveness of the therapy.
11th June 1956: B.P. 110/70 mm. Hg. Health excellent and can walk for long distances without feeling any effects.
5th August 1957: for the past eighteen months the patient felt extraordinarily well, had no trouble with his heart or circulation and had no more pains in his left leg. However, for the past approximately 6 to 8 weeks he has been suffering from a growing shortness of breath and pain in the left leg, involving numbness and lack of sensation. Renewed injections of REGENERESEN were given: 3 of intima, 3 of hypothalamus, 2 of total suprarenal gland, 2 of testicle, 3 of masculine placenta which again were tolerated. Later, the patient was free completely of all complaints.

Dr. W. Bau reports on chief engineer L. Schö., born on 16th January 1895. Diagnosis: endangitis obliterans, on the right more than the left. Dysbasia: must stop after walking 50 metres. Pulse missing in the right pedis dorsalis artery. Medicinal treatment, electro-physical and balneological therapies, as well as spa treatment from 11th May 1965 onwards. 17th September 1965: no improvement revealed in the oscillograph.
Treatment with REGENERESEN from 12th October to 16th November 1965: midbrain, cerebellar cortex, thalamus, hypothalamus, suprarenal cortex, placenta, heart, liver, intima, anterior lobe of hypophysis and testicle.
24th November 1965: pulse can again be felt in the right dorsalis pedis artery. Oscillograph: values of 1.5 mm in the right dorsalis pedis. The values of the dorsalis pedis and the poplitea have improved noticeably: the dorsalis pedis by 3 mm. and the poplitea by 4 mm. Subjective assessment: patient can walk for one hour without any pain. In addition, the clinical symptoms had disappeared.

Dr. Kuno Rl., born on 5th March 1906. Diagnosis: endangitis obliterans, on the right more than the left, with claudication. Right dorsalis pedis artery can no longer be traced, slightly positive oscillogram on the left.
15th December 1964: right dorsalis pedis artery cannot be felt.
In addition to physical measures, REGENERESEN were administered: intima, liver, brain stem, prostate gland, testicle, placenta, adrenal medulla and hypothalamus.
21st July 1965, eight weeks after the start of the REGENERESEN treatment: right dorsalis pedis traced, showing oscillations of 2 to 3 mm. Clinical

finds: right dorsalis pedis can only just be felt, not yet normal, can be barely felt on the left. Cutaneous temperature, right equivalent to left. Claudication has disappeared, creeping feeling in both lower legs still present.

Mrs. XX, patient, 85 years old.
Diagnosis: hypertension, injured myocardium, coronary arteriosclerosis, and circulatory disturbances (31).
The patient had been under treatment since 1968. She was suffering from a hypertonia of 220/120, injured myocardium, coronary arteriosclerosis, general and cerebral circulatory disturbances. A significant dyspnea was caused by the coronary-artery insufficiency and an emphysema.
Digitalisation had been carried out for years and was continued.
I began with injections of 8 ampules of female placenta and heart REGENERESEN respectively, three times a week. After one week there was an increased elimination of water, and there was an improvement in the dropsy of the legs and the dyspnea. After eight injections all told of heart and female placenta the dropsy of the legs had disappeared and the patient was able to climb stairs without breathlessness.
Following an interval of three months, the heart was in the same good condition with a B.P. of 170/95. In order to maintain this condition, the patient was given six ampules of heart and intima REGENERESEN. Subsequently, she was given weekly injections of RN 13 for a period of eight weeks.
This led to an improvement in the cerebral and general circulatory disturbances, vertigo, discoloration of the lower extremeties and memory. The patient was more mobile and paid visits to other people's homes.
In July 1969, there were again signs of dyspnea, strain and a slight dropsy of the legs. She was again in a good state of health after the administration of a series of eight ampules of heart and female placenta REGENERESEN, followed by one weekly injection of RN 13 for a period of two months. This course of treatment was repeated in 1970 and 1971; there was no longer any deterioration in her general state of health. In 1972, the patient moved to another town. Until that time she was physically in good form and mentally alert. B.P. in the region of 170/90, strong and regular heart sounds, no significant signs of a coronary-artery insufficiency under the customary load borne by an 85 year old.

Patient H. D., born on 20th August 1909.
Diagnosis: malignant hypertension with nephrosclerosis, certainly based on a chronic pyelonephritis, and a coronary-artery insufficiency (31).
Up until he visited my general practice in the winter of 1969/70, the patient had been healthy and had always been able to work. Recently, he was examined by a specialist. It emerged that he had a malignant hypertension with nephrosclerosis, caused by a chronic pyelonephritis, and a coronary-artery insufficiency. Later, it was discovered that he had a prostate gland adenoma which could not be operated on and was detoured by a suprapubic bladder catheter, and that it was necessary to treat a recurrent urinary tract infection and renal insufficiency.
Status praesens and finds: 180 cm. in height, weight of 84 kg., able to move freely, patient in a relatively good state of health, no signs of anaemia, but

a slight cyanosis of the lips and oedemas in both lower legs reaching up to the knees. Heart enlarged on either side, Cor bovinum in X-ray picture, aortic sclerosis and congestion in the pulmonary circulation, as well as tumorous enlargement of the liver. Pulse cannot be felt on either side of the foot. B.P. fluctuating between 220/135 and 185/90. Kidneys shrunk on either side in the X-ray picture, no nephro-calcinosis. Retention of substances normally contained in the urine: creatinine generally between 4.5 and 5.2 mg%, urea between 100 and 130 mg%, and result of Esbach's test between 2 and 2 1/2 %o. Uric acid at the upper limit. A marked reduction in calcium found in the serum and an increase in the gamma-globulin fraction with a normal total amount of protein.
Therapy: A carefully observed diet of eggs and potatoes and generous amounts of fluid (2 to 2 1/2 litres), especially hydragogue teas and the usual therapy. Digitalis, theophylline and thiobutacid, etc.
Special therapy with REGENERESEN: The patient told me that, despite the therapies described above, his health reached a very low ebb at the beginning of 1974: a growing weakness and lack of mobility, an increasing oedema and dyspnea at the least effort. The above-mentioned therapies were continued in addition to injections of REGENERESEN (epiphysis, intima, connective tissue, parathyroid, kidneys, suprarenal gland, occasionally also urinary bladder, posterior lobe of hypophysis and thalamus) from the early summer of 1974 onwards at intervals of about fourteen days, and from October 1974 at intervals of about six weeks. The patient is convinced that this additional therapy has relieved him of his physical disabilities and subsequent depressions, and again restored a limited degree of functional capacity which allows him to take walks and do light garden work daily with relative freedom from any discomforts.
During this period of observation, objective finds were more or less the same, unless one regards the disappearance of the earlier, discomforting urinary tract infection (with an indwelling permanent catheter) as a positive development. Exceptions are the blood pressure values, which for the first time have now reached diastolic pressures of below 100 mg.Hg, and a slightly decreasing oedema which is still present but does not prevent the patient from driving his own car, for example. Conspicuous, however, was the improved appearance of the patient and sense of achievement and power which can certainly be attributed to the aforementioned additional therapy.

It remains to be seen, of course, to what extent very serious illnesses can be improved. However, from my observations the use of REGENERESEN was important and its effects impressive, even though it did not lead to the healing of the symptoms in this case history.

Administered between October 1974 and May 1975 were 5 ampules of intima, 5 ampules of epiphysis, 5 ampules of kidney, 3 ampules of suprarenal gland, 3 ampules of masculine posterior lobe of hypophysis, 4 ampules of thalamus, 1 ampule of parathyroid gland, 2 ampules thyroid gland, 2 ampules connective tissue, 2 ampules of heart and 1 ampule of urinary bladder

Hypotensive Syndrome (4)

The reasons for a physical and psychic involution can be traced back solely

to the endocrine system, or they can also be due to the accumulation of external damage (for example, infections, incorrect nutrition, lack of exercise and recreation).

A frequent syndrome is the hypotension including the symptoms vertigo, hyposthenia, tiredness, lack of drive, depressions and inability to take food. As is well known, the hypotension is not only a premature involution, but very frequently a genuine functional defect in the suprarenal body. In so far as any hidden causal foci can be excluded, one can often presume that there is also a disturbance in the diencephalon. In most cases, it can be shown that there is a disturbance in the functioning of the liver, too. If a symptomatic treatment is unsuccessful, a systematic REGENERESEN therapy can be carried out.

One characteristic case from a large number of examples:-

Patient F., 36 year old student, 1.8 metres in height, 96.5 kg., B.P. 115/90, E.S.R. 3/6, no finds in heart, liver enlarged (breadth of two fingers), complained of "a tired brain", weak concentration and thought disturbance, disturbance of potency, tired during the day and unable to sleep at night (4). "There's no point in my visiting lectures because sitting for the examination is out of the question." On 8th March, administration of adrenal medulla, temporal lobe of the brain and liver. Two weeks later, administration of suprarenal cortex, cerebral cortex and testicle; two weeks later, placenta and testicle. Subjectively, the patient felt better, his blood pressure returned to normal and he increased in weight by 3 kg. Overjoyed, he announced in May that he had submitted his exam thesis. "I again feel that I am in top form and can undertake anything." During the treatment the patient did not use any substances to promote metabolism in the brain, such as glutamic acid, or stimulants such as Pervitin(R) or Nescafé. Now, six months later, he has completed his studies with relatively little effort.

Patient Dr. H., 55 years old.
Diagnosis: decrease in vitality and hypotension (31).
Therapy: 15 ampules of RN 13, 3 ampules of spinal cord, 3 ampules of anterior lobe of the hypophysis, 3 ampules of midbrain, 3 ampules of total suprarenal gland, and 2 ampules of cerebral cortex REGENERESEN over a period of three months. Outcome: a general improvement.
23rd May 1975.

Patient J. B., 56 years old, circulatory disturbance of both legs for the past two years; this deteriorated markedly in the late summer of 1956 (20). Patient complained that after walking he experienced a pain of long duration. Clinically, it was still possible to detect the pulse of the femoral artery, but a pronounced buzzing could be heard above both the femorals. The popliteal arteries were hardly palpable on either side, the pulse on the back of the foot was missing completely. The Ratschow experiment was clearly positive which indicated an extremely advanced vascular process.
On 22nd December 1956, injections of 6 ampules of placenta, 4 ampules of testicle and 2 ampules of heart REGENERESEN. From the middle of January 1957, the patient felt much better. Since the patient, a price supervisor, had to walk long distances, he noticed in particular that he could cover long stretches without feeling the need to rest. Today, the buzzing above the two femorals can no longer be heard, the Ratschow experiment is negative and the pulse on the back of the feet is now palpable. At the moment, the patient feels completely free of all complaints.

Patient R. K., graduate engineer, retired director, born on 5th May 1894.
Diagnosis: anterior wall infarction (31).
In May 1970, transported home from Bad Ems with a serious anterior wall infarction. Refused hospital treatment. During the course of May, a pleural exudate and bad pains in both lower legs, pulse on the back of the feet almost untraceable, serious dyspnea even on standing, and enlargement of the liver.
Towards the end of May an improvement in the heart after intravenous injections of strophanthin and Euphyllin(R), etc., but a painful round area with a necrotic black coloration, measuring about 3 mm. in diameter, under the nail of the left large toe. The patient can sit on the edge of the bed only with great effort, which he did twice daily in my presence.
In other words, it is general senile degeneration which affected, in particular, the heart and lower extremeties. Simultaneously, there was a serious deterioration in his ability to hear.
Contrary to the suggestion of Professor Dyckerhoff, to whom I was still personally answerable, I decided to try and help this seriously ill patient with REGENERESEN, in view of the general diagnosis.
Treatment:
1 ampule each of RN 13, intima, heart and bronchi on 2nd June 1970;
1 ampule of heart, artery, AU 4 and RN 13 on 19th October 1970;
1 ampule of heart, intima, AU 4 and RN 13 on 26th November 1970.
The patient got up, the necrosis had disappeared, he was able to make about ten steps without pain and the pulse on the back of the foot was again traceable.
Treatment:
1 ampule each of artery, heart, intima and RN 13 on 5th April 1971;
1 ampule each of intima, RN 13, artery and heart on 27th July 1971;
1 ampule each of RN 13, intima, artery and heart on 30th October 1971.
Patient again drives the car.
Treatment:
1 ampule each of RN 13, heart, artery and intima on 17th January 1972;
1 ampule each of artery, intima, RN 13, and heart on 21st March 1972;
1 ampule each of RN 13, heart and intima on 20th February 1973; and
1 ampule each of RN 13, intima and heart on 8th November 1974.
In the meantime, the patient purchased a holiday flat in the Allgäu mountains where he was treated, intercurrent prostatectomy in Kempten, but now drives straight through from Stuttgart to Oberstdorf. Walks lasting two to three hours are now possible, but only if the paths are on a level.
1 Ampule each of heart (foetal), intima (foetal), RN 13 and artery injected on 21st April 1975.
The patient now gives the impression of a physically and mentally energetic, truly active man, whom no one would believe is 81 years old and who is no longer suffering from possibly fatal illnesses.

III. Organo-Pathology

Mrs. A. Z., 50 years old, diagnosis: pancreas sclerosis (39). First clinical symptoms appeared in 1943 in the form of a hepatic colic, followed by frequent upper abdominal complaints, independent of meals. In 1949, first radiological proof of clacareous infiltration of the pancreas. In 1950, a laparotomy due to a suspected epigastric hernia. In the process, a thicken-

ing of the round ligament of the liver was discovered. An histological examination of some removed tissue revealed a chronic inflammation and a fat necrosis of the pancreas.

The clinical picture deteriorated significantly from the middle of 1953 onwards, with a lack of appetite, nausea, occasional rises in temperature and an enormous loss of weight. At the beginning of 1954, vomiting of bilious substance, greenish frothy diarrhoea. Consequently, she was taken to hospital in February 1954.

At the clinical examination, I found an emaciated patient. An X-ray examination of the pancreas confirmed the complete calcification of the pancreas. Faeces pultaceous, greasy, normal colour and up to 6 or 7 bowel movements per day. Electrophoretic investigation: increase in alpha-globulin, sugar tolerance according to Staub-Traugott test, plateau-shaped blood sugar curve after the second administration of sugar. After the Schmidt test diet: starch granules ++, cellulose ++, striated muscle fibres +, and abundant fat plaques. Enterococci in the gallbladder. An X-ray examination of the stomach revealed no diseased finds. Diffuse damage to the myocardium (myocardosis).
The clinical picture could be influenced favourably with large quantities of pancreas preparations, namely, 10 to 15 tablets of Festal(R) daily. After about 1 3/4 years the patient's general health again deteriorated and the Festal tablets were no longer effective; an enormous decrease in weight. Up to twenty bowel movements a day, a rapid degeneration. Consultation examination of the patient in her flat in February 1956: extreme cachectic condition so that the death of the patient appeared imminent. She refused to go to hospital. She was put on a strict diet, given larger quantities of the pancreas preparation and, simultaneously, 8 ampules of REGENERESEN (4 liver and 4 stomach, that is, 2 ampules each per week. A noticeable improvement in the patient's condition from April 1956 onwards; she had put on 30 pounds in weight by August 1956 and needed almost no further administrations of the pancreas preparation.
The patient again visited me on 13th December 1956 and reported that the effects of the REGENERESEN treatment had been felt most strongly in August 1956. She was again tired and weak, and suffered from diarrhoea once more, but the clinical picture was not nearly so serious as it had been previously. Starting on 13th January 1957, she was given a total of 9 ampules of REGENERESEN (3 each of placenta, liver and stomach) over a period of four weeks. She began to flourish, even though she was urged not to take any more pancreas preparations, and now, at the beginning of September 1957, is feeling remarkably well.

A 42 year old woman, a total calcification of the pancreas, and a first-degree emaciation with sprue-like symptoms (40). She was virtually moribund in February 1956. Due to the seriousness of the clinical picture, there was no longer any question of a micro-injection. In this situation, in which pancreatic enzyme was also completely ineffective, the patient was given weekly alternative injections of one ampule of liver REGENERESEN and one ampule of stomach REGENERESEN during the course of three weeks.
Four weeks after the completion of this treatment, the patient's general state of health had improved, she had a large appetite again and today, six months later, her weight has increased by 15 kg. and she is outwardly healthy, even though there has been no change in the calcified pancreas with the consequent reduced functioning.

Patient L. W., 54 years old, damage of liver parenchyma, Takata 50 mg., climacterium virile and erythrasma (20). REGENERESEN therapy on 19th and 20th May 1956: 4 ampules each of liver and testicle, and 2 ampules each of placenta, spleen, gastric mucous membrane and hypothalamus. - 24th August: Takata 90 mg., erythrasma completely healed, patient felt well and on form.

For several weeks a 75 year old woman, suffering from a serious cirrhosis of liver, lay in coma hepaticum in a neighbouring hospital (15). Constant vomiting and somnolence indicated the seriousness of her condition. (Takata 30 and thymol test 8). Initially, I gave her two injections of REGENERESEN, i.e. liver and hypothalamus, on 1st February 1957. The following day, the vomiting, which had already lasted for three weeks, ceased altogether. I gave her liver, hypothalamus and heart REGENERESEN again on 7th February. There was a further improvement in the patient's condition. I repeated the same injections on 14th February 1957. The patient's condition improved to such an extent that she left her bed and can again be useful about the house. On 15th March, the thymol test was again normal and the Takata was 80.

Charlotte H., 83 years old, hepatitis since the middle of November 1960 (22). Clinical treatment from 24th of January to 29th March 1961. Follow-up examination on 7th September 1962: hypalbuminosis of 22.4 %; gamma globulin of 16.4; beta globulin of 52.5; Takata-Mancke of 30 mg%, Weltmann 1 to 9; cadmium highly positive. On 30th June 1964: albumin of 41.8; alpha globulin 1 to 4; alpha 2 to 6.2; beta of 11.8; gamma of 36.2; Takata of 50; Weltmann 1 to 8; cadmium positive. -
Unfortunately, it was impossible to conduct a further follow-up examination on this very bright patient. The hospital director wrote: "The discrepancy between the appearance, subjective condition of the patient and the lability tests is unbelievable." Yesterday, I again injected RN 13, female placenta, liver and hypothalamus. Every year she spends about five months in the mountains and feels well. Anyone who knows the situation in the field of liver treatments cannot understand why this school of medicine has not been more fruitful.

Mrs. L. B., 35 years old. For years she had suffered from incurable acne on the face (20). Treatment with REGENERESEN on 16th and 17th April 1956, namely, three of spleen, two of liver, two of suprarenal cortex, two of hypothalamus and two of ovarian follicle, in accordance with Abderhalden's reaction. The acne had healed completely by the end of May 1956. A relapse in October 1956. In accordance with the Abderhalden's reaction, she was again given injections of spleen and suprarenal cortex REGENERESEN on 12th and 13th November 1956 (3 ampules of spleen and 2 ampules of suprarenal cortex). There was once more a substantial improvement in her condition at the end of December 1956. A further relapse in the spring of 1957, but, unfortunately, she was no longer treated by me.

Child B. F., 6 years old. Chronic eczema of the hands, for which the child has been having specialist treatment for years (20). In accordance with Abderhalden's reaction, two ampules of anterior lobe of hypophysis and one ampule of hypothalamus injected on 24th July 1952. A follow-up examination on 17th August revealed that the chronic eczema had healed.

Patient S., 60 years old.
Diagnosis: coxarthrosis - bilateral gouanthrosis (31).
Therapy: 16 ampules of OSTEOCHONDRIN over a period of five months.
Result: patient was able to take longer walks without pain and was less easily tired.
Particularly impressive was the case history of a 52 year old patient with primary chronic rheumatoid arthritis (39), who had been treated clinically for a long time. Then a cell therapy produced good results and she was able to walk again. This improvement lasted for six months, when a deterioration set in, and, finally, we gave her a total of eight ampules of suprarenal cortex and placenta REGENERESEN. About three months after this treatment, during which time she had been given no other medicaments, she visited me in an extraordinarily good condition. She was able to move all her joints which were no longer swollen, the blood sedimentation had improved noticeably and her general state of health was better than ever before. She no longer needed any drugs and was again completely in charge of all her faculties.

Patient F. V., age 66, male, German nationality, drug used: REGENERESEN.
Diagnosis: rheumatoid arthritis (15), loss of sensation of taste and smell; arsenic dermatitis of legs and arms; coldness and numbness of feet and legs; coronary insufficiency; beginning of liver failure.
History (important conditions): I have treated this patient since 1947 for arthritis, especially of the fingers, hands, wrists and shoulders. He had had trouble for ten years before that. With almost constant treatment, I had managed to keep him fairly comfortable and able to work. He had also begun to have signs of coronary trouble; tightness in chest, especially on cold days, etc. For a long time he had had coldness and numbness of feet and legs.
Examination (important findings): B.P. 150/90; increased dyspnea on moderate exertion with tight feeling in chest; coldness of legs and feet; some variable swelling, stiffness and pain on forced motion and tenderness of fingers, hands and shoulders; slight tenderness over liver and spleen on deep pressure.
Progress: When on a trip to Germany in 1956 he was taken ill and, after unsuccessful treatment, a German doctor suggested the REGENERESEN treatment. This he had and, by the time he returned to the United States, his arthritis had cleared and he has remained free of arthritis since. Also a loss of sensation of taste and smell that had plagued him for a long time had cleared. Several times since then he has had a return of this loss of sensation following colds and each time the nasal mucous membrane injections have relieved him. After returning to America he had more REGENERESEN injections with clearing of the tight feeling in his chest and of the coldness and numbness of his legs; also the heavy feeling in the liver and spleen areas has disappeared. Moreover, in July 1957, the arsenic dermatitis of both legs and arms cleared quickly after skin injections; also following these injections he has had a growth of fuzzy hair on his bald head.
Signs of toxicity: none.
Results: excellent.

An approximately 60 year old woman with serious arthrosis deformans was almost free of all symptoms after injections of four ampules of placenta REGENERESEN (40).

A 70 year old woman, who was suffering from a serious arthrosis deformans of the hip and knee joint (39), was given 6 placenta REGENERESEN injections. This led to a quite remarkable objective and subjective improvement which lasted for about six months. Her pains had disappeared, she was able to move freely and do her household chores, which had been impossible previously. Irgapyrine(R), Pyramidon(R) and salicyl preparations had no effect whatsoever, and physical therapeutic measures failed completely.
18th March 1972. "Dear colleague. I have pleasure in informing you that I treated a 54 year old woman, who had been suffering for ten years from chronic pains in her right hip-joint, with REGENERESEN (29). Mrs. Wolke was able to walk only with great difficulty using two walking-sticks, she fell to the ground frequently and was unable to stand up again by herself. She was in constant pain and, after ten years of one treatment after the other in bathing establishments, etc., she had lost all enjoyment of life. A professor at Amsterdam university (orthopaedics) wanted to operate on her, but he could not guarantee that she would not have to spend the rest of her life in a wheel-chair. I treated the woman with OSTEOCHONDRIN, female placenta and RN 13, namely, three therapies all told. The result is unbelievable: this woman, who has been an invalid for years, has thrown away her walking-sticks, she can again spend hours driving, she works in the garden and is without pain. The first two treatments were in March and May 1971. The third, when she had no pain any more, was in February 1972. I should be grateful if you could answer my query: should I now wait until the patient notices a return of her complaints before starting the fourth treatment? The radiologist says that the hip-joint is worn. But she no longer has any pain. I should be grateful for your advice."
18th April 1972. "Dear colleague. Thank you very much for your letter of 28th March 1972. Mrs. Wolke works in the garden, walks without any sticks and proudly demonstrates her kitchen which has been built in such a way that she could work in it from a wheel-chair. She has abandoned the idea of an invalid-chair. I am curious to see how long it will all last."
1st September 1973. "The last injections were in May 1972 and the woman, who was condemned to a wheel-chair by a professor, has no longer any pain and can do everything."
16th September 1973. "Mrs. Wolke is still well. The last treatment with OSTEOCHONDRIN and RN 13 was in May 1972. The acutely atrophic muscles now almost resemble that of a healthy leg, and the woman can do absolutely everything."
November 1973. "I first saw Mrs.Wolke on 30th March 1971. She walked with great difficulty on two sticks. She had constant pains in her back and, after many treatments (all without success), she was very depressed. Finally, she could no longer tolerate the medicaments... Now, in November 1973, she is still well. Two Dutch doctors, who treated her previously, said: 'For us your improvement is miraculous, but we cannot believe that it was the treatment.' "
29th September 1974. "Mrs. Wolke is still well, two years and five months after the last treatment. It is almost unbelievable. I have complete faith in REGENERESEN."
18th January 1975. "Mrs. Wolke is still well and that after 2 1/2 years and two treatments with your preparations. Amazing!"

I have achieved good results with OSTEOCHONDRIN (22), especially in connection with the innumerable WzRz (root pain) syndromes of the female cervical vertebral column; however, I give my patients almost always placenta and, in the case of older people, RN 13 either once, twice or three times weekly.

Osteochondrosis (4)

Many people suffer from slight or acute degenerative processes of the vertebral column as early as middle age. The Viennese school speaks of a presenile involution osteoporosis. According to SIEGMUND, a constitutional weakness in connective tissue forms the locus maximae reactionis for injections and additional damage, of which, in the view of SCHLIEPHAKE, disuse atrophy plays a leading role, especially in the case of premature involution. Mesenchymal tissue is just as sensitive to humoral influences as it is to an inhibited blood flow as a result of lack of functional strain and muscular action. On account of their complex aetiology, damages to the vertebral column are not always distinguishable from rheumatic, climacteric or degenerative forms.

All the more satisfactory, therefore, is a REGENERESEN treatment, when it is necessary to make allowances for endocrine deficiencies or other degenerative processes in the system of connective tissue in the therapy plan. In this context, the maxim frequently quoted by general practitioners is especially valid, namely, a complex aetiology requires a complex therapy, in which endocrine substances as well as physical and movement therapies all have a role to play. That REGENERESEN can achieve impressive results has been demonstrated by a whole series of conscientiously observed cases over long periods. Indeed, in some cases additional therapies were prescribed but dispensed with after the administration of REGENERESEN.
The above assertions can best be illustrated by the case of a patient who was treated for years without success and appeared particularly resistant to therapies.
Patient F., 55 years old, housewife, 1.67 metres in height, 82 kg. in weight, B.P. 190/120, E.S.R. 12/37, complained of restlessness, insomnia, vertigo, stubborn pains in her back, shoulder and arm, pains in the back reached into the epigastrium, rugitus and pain after eating (4). Several years of treatment in spas was unsuccessful.
X-ray examination: Deforming spondylosis of the cervical, thoracic and lumbar vertebral column, but to only a slight degree. Calcipenia.
In May 1956: hypothalamus, heart and placenta.
In June 1956: placenta and vertebra. In July 1956: corpus luteum and liver.
In August 1956: brain stem and heart. In September 1956: intima and liver.
During this period her blood pressure dropped to 145/90 and her weight to 74 kg. The spinal pains improved noticeably as did her general state of health. As a result, the patient was again able to look after her seriously ill mother and change her bed daily. The additional muscular effort had a favourable effect. This improvement lasted for one year.
In July 1957, she was again given liver, suprarenal cortex and placenta.
On this occasion, the effects were evident within a week. "I have no pains and can do all the housework." Also noticeable is the fact that the patient is more flexible mentally and derives more enjoyment from life.

IV. Joints, Bones and Muscles

Patient M. K., born on 22nd January 1896.
Diagnosis: acute cervical and lumbar syndrome (31).
Therapy: One month with three injections of REGENERESEN weekly during the first fourteen days and two injections weekly during the last two weeks.

1. Injection of RN 13, OSTEOCHONDRIN and thalamus; 2. injection of RN 13, OSTEOCHONDRIN and hypothalamus; 3. injection of RN 13, OSTEOCHONDRIN and hypothalamus; 4. injection of RN 13, OSTEOCHONDRIN, thalamus and hypothalamus as well as suprarenal cortex; 5. injection of RN 13, OSTEOCHONDRIN, thalamus, hypothalamus and kidney; 6. injection of RN 13, OSTEOCHONDRIN, thalamus and suprarenal cortex; 7. injection of RN 13, OSTEOCHONDRIN, and suprarenal cortex; 8. injection of RN 13, and OSTEOCHONDRIN; 9. injection of RN 13, OSTEOCHONDRIN and thyroid gland; and 10. injection of RN 13 and OSTEOCHONDRIN.
Result: improvement in the cervical and lumbar syndrome, in particular, less pain as a result of movement and load-bearing. Improvement in mobility. Appears to be mentally more alert and concentrated. The disordered cardiac rhythm has disappeared. Less dyspnoea when bearing loads. 27th May 1975.

Patient I. H., born 3rd April 1930.
Diagnosis: coxarthrosis (31).
The patient suffered from a long-standing coxarthrosis with partial stiffening and consequent dragging gait. Also complained of lack of drive.
On 12th August 1970, a course of REGENERESEN was started, divided up into seven treatments, which involved the administration of 1 ampule of connective tissue, 3 ampules of female anterior lobe of the hypophysis, 3 ampules of hypothalamus, 2 ampules of midbrain, 3 ampules of total ovary, 2 ampules of brain stem, 3 ampules of thalamus, 2 ampules of diencephalon and 20 ampules of OSTEOCHONDRIN.
At a discussion with the patient two months later to determine the success of the treatment, it was clear that her general state of health had improved and she showed a greater interest in her environment. There was a pronounced improvement in the general "rheumatic" complaints, but, although her joints were less painful their mobility does not appear to have been influenced to any significant degree.
Her family doctor repeated the treatment later after she had left the clinic. She reported one year later that the therapy had done her a great deal of good and the improvement lasted for one year.

Patient A. B., female, 78 years old.
Diagnosis: osteoporosis (31).
I have been treating the patient as her family doctor since 1959. An X-ray examination was conducted in February 1972, due to severe backache in the lumbar region. All parts of the skeleton shown in the X-Ray revealed changes indicative of an osteoporosis.
She was given six injections of OSTEOCHONDRIN. Subsequently, Mrs. B.'s condition improved to such an extent that she could look after herself and her household chores (living alone) without any severe pain. As a result of relapses, which never reached the degree of painfulness of the initial illness, it has been necessary to give her two further therapies of a similar nature to-date. 16th June 1975.

Patient E. K., female, 74 years.
Diagnosis: osteochondrosis. spondylosis and hyperuricaemia (31).
Mrs. K. experienced the healing effect of REGENERESEN on her husband and asked me to give her the same treatment.
She was suffering from a moderately serious hyperuricaemia which caused acute pains in the metacargo-phalangeal joints and, occasionally, in the joints of the big toe. In addition, she had an osteochondrosis and spondylosis.

Treatment: one ampule each of OSTEOCHONDRIN, synovia, RN 13 and cartilage on 19th October and 26th November 1970; 5th April, 2nd July and 3oth October 1971; 21st March and 17th November 1972; 20th February 1973; 11th March and 8th November 1974.
Intercurrent epigastrium syndrome after a serious gastro-enteritis in 1975. Gastroscopy and internal examination. No indication of a neoplasm, nothing abnormal discovered. One ampule each of OSTEOCHONDRIN, synovia, RN 13 and cartilage on 25th April 1975.
After three days the patient was overjoyed to report that she had a big appetite and suddenly felt so well that she would like to accompany her husband to their holiday home.
I have not heard from her since her departure. I would say that this is a sign that her health has stabilised.

Dr. Gisela Jordan-Engeln, Würselen, 14th August 1972: 73 year old mother from Erfurt with progressive muscular atrophy. Treatment in the Weserbergland Clinic in 1970. Administration of musculus, hypothalamus, female anterior lobe of hypophysis, spinal cord and female placenta REGENERESEN.
"The success of the treatment with REGENERESEN was easily recognisable. She was able to walk with greater confidence, her ability to grip with the hands and fingers was greater, her general state of health improved and her exceedingly low weight increased. This success is all the more remarkable due to the fact that Mrs. Jordan's general state of health was particularly bad because of a fall, fortunately without any fractures, shortly before she left for her trip in the Federal Republic of Germany ... In 1971, again 12 ampules in two weeks. On this occasion, too, the improvement was clearly noticeable: the muscles of the calf, which were already badly shrunken, increased in size, depressions in the hand became filled in, and the patient's general state of health improved markedly. The improvement continued a long time after her return to Erfurt ...
The treatment was continued in 1972. A certain improvement in her general condition is again discernible. It remains to be seen whether an interval of one year between two treatments is too long."

Patient L. F., born on 27th May 1922.
Diagnosis: vertebral defects (31).
A typical case of vertebral defects, which was improved significantly by an "intermediate treatment with OSTEOCHONDRIN" (half intramuscular and half weal therapy).
The patient came for treatment on 18th January 1975. Diagnosis after the initial examination: left-sided ischialgia, right-sided psoas syndrome and first to second degree panniculosis. At that time, the patient complained of pains stretching from the small of the back into the calf of the left leg via the hip, especially at nighttime (occasionally with spasmodic conditions of the calf musculature). It was reduced fifteen years ago under an anaesthesia in hospital. No improvement, and she has since suffered from repeated attacks of pain in the sense of chronic lumbalgia processes with occasional bouts of lumbago, and, finally, a pronounced ischialgia which cannot be verified by reflex actions. Recently, the pain emanating from the left sciatica area in particular has become more and more unpleasant; despite a medically adapted bed her sleep is disturbed by intermittent pain.

She was given chiropractical treatment by a masseur in a hospital three years ago (!). No improvement, no deterioration. A myelography (due to a suspected slipped disk) taken two years ago was negative.

To those experienced in this field the case history is sufficient to reveal that, in addition to the chronicity of the ailment, there is also a static complaint with a degeneration of the musculature, segmental foci of disturbance in the region of the lumbar vertebral column, and the process is certainly based on "loosening crucial ligaments" (according to Gutmann) with a clinically non-verifiable but undoubtedly existent loosening of pelvic girdle and a first degree insufficiency in the lumbosacral transition (loosening of crucial ligaments) - a diagnosis which was later verified by special X-ray pictures.
Since the patient is still in the climacteric age (menopause about 1 1/2 to 2 years), she is also suffering from certain disturbances to her connective tissue, namely, in the nature of a panniculosis, but at 71 kg. she is not appreciably overweight in view of her height of 1.78 metres.
No nicotine, no alcohol, never taken anti-baby pill, sleeps well, only disturbed by the sciatica. One child (born when she was 33 years old), the course of labour was accelerated with a perineal tear, stomach "very sensitive".
The usual preliminary clinical examination produced the above diagnosis.
A prolapse at the time was ruled out of the question by the myelography, and a healed prolapse could not be demonstrated in the X-ray photographs. The appearance of attrition in the region of the intervertebral disks could be verified radiologically, but these are customary with advancing years.
Undoubtedly, a climacteric disturbance of the metabolism (middle-aged spread) and a clinically congenital instability of the lumbosacral transition are the essential factors that could be responsible for the ischialgia-type complaints on her left-side and the pains reaching into her right buttock, caused by the clinically proven psoas syndrome (according to MOSER). An examination of the hips produced no suspicion whatsoever of a hip disease or coxarthrosis. Nothing abnormal discovered in the state of reflexes, with the exception of the weakened Achilles jerk on the left-side. Standing on the toes and heels, walking on the toes and heels almost normal, Babinski's reflex negative, B.P. 120/80 and pulse 78.

After the usual clinical and radiological examinations had been carried out, a pelvic belt was prescribed and a course of remedial gymnastics begun as the diagnosis of a "loosening of crucial ligaments" was now unequivocal. Since we have developed our own remedial gymnastics for this kind of insufficiency of the pelvic girdle, that is, our so-called MiPro (minimal programme) which is particularly effective if the bed is suitably adjusted and a pelvic belt used (elimination of the sacrum's wedge function), the pain disappears during the first few nights in nine out of ten cases. However, this was not so with this patient, which led us to assume that the musculature was suffering from a certain wear and tear and "tiredness", and encouraged us to give her a series of five injections of OSTEOCHONDRIN.

Taking this patient as an example, we wish to illustrate an optimum treatment if the diagnosis is right.

During the first week she was injected with three ampules of OSTEOCHONDRIN, that is, intramuscularly on Monday. On Wednesday, after an interval of one day, OSTEOCHONDRIN was administered paravertebral using the weal therapy,

that is, in the case of Mrs. F., from the 3rd lumbar downwards to the middle of the sacral region. Again intramuscularly on the third day of the first week, namely, Friday. We took care to make the intramuscular injections in that side of her body which was particularly painful. In this case on the left side, where the ischialgia-type pains were felt.

In the case of Mrs. F. (ideal case), we again injected OSTEOCHONDRIN during the second week at intervals of three days, namely, intramuscularly on the first day (half of 2.5 ccm) and the other half was applied to the same spot mentioned above using the weal therapy. In the case of our patient, she had already noted an improvement in the second week after the 4th injection of OSTEOCHONDRIN. We then gave her the 5th injection three days later, namely, on the right-hand side (because of the psoas syndrome which was on the right).

The patient, who had been suffering from her clinical symptoms for many years, had an unstable lumbosacral transition and, consequently, a loosening of the pelvic girdle which had certainly caused an irritation typical of this region of the body (fatigue of the musculature, insufficiency of the lumbosacral transition due to relaxation of the ligaments and tendinitis both in the region of the right and left musculus psoas, as well as in the area of the musculi piriformes - rectal examination). Moreover, the "enhancement of the body's specific defence mechanism" in these regions due to the substances contained in OSTEOCHONDRIN, namely, the procain and hyaluronidase contained in OSTEOCHONDRIN (amounting to 150 international units) improved the patient's mobility to such an extent that the additional measures, such as adaption of the bed, and an improvement of the situation regarding the loosening of crucial ligaments by means of a pelvic belt, began to take effect.

The use of the paravertebral weal therapy is based on the perhaps hypothetical yet in practice frequently confirmed theory that a segmental application is more effective. In view of the composition of OSTEOCHONDRIN, this can be assumed not only in the sense of a segmental neural therapy. In this case, we adopted a variation by injecting the OSTEOCHONDRIN in weals on the left and right, because the psoas syndrome existed on the right (after the diagnosis had been verified radiologically and clinically, this psoas syndrome was injected lege artis according to MOSER). It seemed to us that the psoas syndrome on the right was simply an accompanying syndrome of the existent unstable pelvic girdle and belongs to the tendinitis.

From our experiences gained with several hundred similar cases, we can sum up by saying that the complaint was significantly improved by using an intermediate treatment with OSTEOCHONDRIN, as described here (it always follows more or less the same course and takes effect, if the patients are living at home, over a period of three weeks). As an additional diagnosis, we must also point out that there was a "postischiatic circulatory disturbance" (according to REISCHAUER); we have achieved particularly good results with OSTEOCHONDRIN in precisely these cases (probably due to the different components and on account of injections in the affected side of the body).

It has already been mentioned that there were no deviations in the laboratory values, including the electrophoresis, and also only fluctuating but no significant (checked twice) serologic-rheumatic symptoms.

The final diagnosis is a postischiatic circulatory disturbance on the left with an insufficiency of the lumbosacral transition (2nd degree loosening of crucial ligaments) and loosening of the pelvic girdle, a psoas syndrome on the right, a 1st to 2nd degree panniculosis, and a possible toxicosis due to foci.

After she had been clinically examined and the finds checked in the laboratory again, she visited me over the Easter of 1975; she admitted that her complaints had virtually disappeared and that she was doing her MiPro at home.

A subsequent visit at the end of May revealed that there had been an improvement in the panniculosis (despite the bad, rainy and changeable weather), and that she felt only a slight "recollection" of the pain in her left leg when she overexerted herself doing housework or driving the car. Otherwise, she was completely free of all symptoms. A welcome loss of weight of 2 kg. due to her greater mobility.

With slight variations this report on Mrs. F. applied equally to many other male and female patients, although it should be mentioned that men tend to have a painful blockage of the lumbosacral transition.

We do not think it advisable to administer frequent, small injections of OSTEOCHONDRIN in slight and moderately severe cases (Mrs. F. was a moderately severe case); on the other hand, over the past fifteen years we have often recommended a repetition of OSTEOCHONDRIN injections, whereby the patient was also subjected to a clinical examination and his or her attention drawn to a kinetotherapy we teach our patients.

V. Hypofunction of Glands and Developmental Disturbances

An obvious field of treatment is undoubtedly that involving the impaired functioning of glands with internal secretions. Here, once again, are a number of case histories :-

Patient Miss B. B., 21 years old, endogenic emaciation (20), height 170 cm., weight 50 kg. On 6th August 1956, 2 ampules of anterior lobe of the hypophysis and 1 ampule of adrenal medulla. By 28th September 1956 she had increased in weight by 6 1/2 kg.

A case of nanism caused by a disorder of the pituitary gland (15) revealed the following :-
A 7 year old girl of 97 cm. in height had grown only 5 cm. over the past three years. The skin on her trunk and extremeties had changed and was slightly reminiscent of ichthyosis. On 9th March 1957, the child was given 2 ampules of female anterior lobe of the hypophysis, and 2 ampules of thalamus. The REGENERESEN was tolerated without any reaction. At the follow-up examination on 14th May 1957, the girl had grown 1 1/2 cm. in 5 weeks, whereas in the previous twelve months she had grown only 1 cm. Her bodily proportions had improved, her ichthyosis-type skin had become smooth and soft without any other treatment, and her appetite had increased. The child is also much quieter and does not behave in quite such a silly way as previously.

At this point, developmental disturbances in the sense of a dystrophia adiposogenital should be mentioned (15).

Developmental disturbances (dystrophia adiposogenital): a 13 year old boy was suffering from a severe atrophy of the testicles and a failure of descent of a testis (three years ago the testis had been moved into position in an operation). At the beginning of January 1957, the testis was about the size of a pea. After weekly administrations of initially 2 dosages of hypophysis REGENERESEN, then placenta, thymus and later testicle REGENERESEN the testis had become almost normal. The existing adiposis decreased slowly. The boy now looks perfectly normal.

In this context, it is interesting to note that there have been three cases of cryptorchism in which merely injections of testicle REGENERESEN have achieved a spontaneous descent of the testes.

A rewarding field - if not the most rewarding - for the application of REGENERESEN is that of mongolism. If one considers the tragic fate of these poor children when they are not treated, how they vegetate, decline into severe subnormality, and if one considers the cost of their maintenance and care for their parents, health insurance institutions, the government and welfare organisations, then in comparison the expense of a REGENERESEN therapy - no matter how high it may appear at the moment - is almost insignificant. Successes are all the more impressive if the therapist and relatives show the necessary understanding and patience. Naturally, retardation and developmental disturbances cannot be overcome in a matter of weeks, and the years that are missing in the development of these poor creatures cannot be made up for in a couple of days. This therapy requires a great deal of time and patience. One must be prepared to wait for the seed which has been sown by REGENERESEN to grow and bear fruit. The earlier the start with REGENERESEN treatment, the faster and more complete will be the healing effect. But one is constantly amazed at the favourable results which it is still possible to achieve when patients have reached an advanced age.

A colleague wrote (15) :-
"At the end of June last year I gave you brief details on your form for the organ test of the clinical picture of my small daughter Monika, who suffered from encephalo menengitis during her first year of life. You were kind enough to send me six ampules of REGENERESEN (cerebral cortex, parietal lobe of the brain, brain stem, little brain, spinal cord and female placenta). The immediate reaction was so remarkable and the subsequent result was so encouraging that I should like to tell you about it.
After the first double injection of cerebral cortex and parietal lobe of the brain (one ampule each in both gluteus muscles), she became extraordinarily restless. She threw her head from side to side for hours on end whilst lying in bed, she was clearly somnolent and occasionally it was impossible to get any response from her; severe outbreaks of sweating. Her body felt very hot. A more objective diagnosis by measuring her temperature was dispensed with so as to avoid any excitement. This condition lasted for about 24 hours. Afterwards, the child was exhausted and yet, amazingly, there was an immediate impression that her sensorium had become clearer. Following the double injections of brain stem and cerebellum, as well as spinal cord and female placenta, at intervals of about fourteen days, the reaction described above was very slight and in each case lasted only two to three hours.
As already mentioned, one had the impression of a clear sensorium after only the first injection. This impression grew much stronger over the following weeks. An inner restlessness and inability to play with toys for any length of time, which was evident before the injections, has now virtually disappeared. Moreover, she no longer suffers from an intermittent insomnia lasting several nights, which filled her with a hectic restlessness, a desire to run about the house at night, or lie in bed for hours screaming.
In addition, her efforts to speak recently have become more obvious, although she is still unable to form words - rather, only distorbed word fragments are recognisable. The child appears to understand concepts, she comprehends a great deal and if asked, for example, to pick up certain objects she is always right. Clearly, she understands and knows certain words and concepts, but there is still a motor aphasia."

The success of the therapy will not be evident until years later.

At three years of age, a mongoloid child (15) was unable to walk or speak. Two medical officer of health certificates confirmed that the child would never be able to go to school and would probably have to be assigned to an institution. The child was treated for two years with REGENERESEN.
In October 1959, the child began to walk and to babble, so that, with some difficulty, the parents were able to understand what it wanted. At that time, it was given another REGENERESEN therapy. In January 1960, the child was able to walk on its own and spoke clearly. In April this year it was sent to a normal elementary school. It has completely recovered from its backwardness and differs in no way from children of its own age. Remarkable in this case is the suddenness with which the success occurred at a fairly late date after a consistent treatment.

Disturbances in the Sexual Sphere (4)

As a result of the war and the influences of the post-war period, many couples were separated or decided not to marry due to the anxiety of simply trying to stay alive. The serious effects of hunger and fear on the endocrine system have been demonstrated, among others, by HAUBOLD (9), who provided countless evidence. Disturbances in menstruation, frigidity, sterility combined with adiposis, and pathological exhaustibility characterize many late marriages which were concluded when the economic conditions had improved. The couples' excessive efforts at work often meant that the women had exceeded the most favourable age for a gestation.

Many experienced tissue therapists are unanimous in their reports that during the course of a long treatment with cell-specific substances there was not only a general revitalisation, but also irregularities in the period were frequently removed and often an unexpected gestation occurred. A sterility can be treated effectively with administrations of follicle and corpus luteum REGENERESEN in accordance with the menstrual cycle.

Patient Mrs. A., 37 years old, oligomenorrhoea, pathological basal temperature curve, adiposis (4), overweight by 30 pounds. From February 1956 onwards, she was given placenta, hypothalamus, corpus luteum alternating with thyroid gland, total ovary and placenta at intervals of one month. She had a normal period for the first time in April 1956. The long awaited gestation occurred in July 1957.

Patient Mrs. H., 32 years old, a neighbour of the above patient who had heard of the success and "also wanted a child" (4). The infantile patient, whose period was often missing for months, is married to an older "tired" man. Both of them were treated on 22nd February 1957. The wife received placenta, liver and total ovary. A gestation was confirmed after three weeks. This was endangered twice through bleeding. A healthy child.

The husband in marriage G. was impotent (4). This was removed by dosages of cerebral medulla, placenta, brain stem, placenta, spinal cord and placenta. The 45 year old, very thin, exhausted civil servant said that in addition he could also sleep normally. His appetite and mental elasticity had also increased.

Patient O. Sch., 36 years old.
Diagnosis: impotence (31).
The patient complained of complete impotence for the past five years. A change of partners did not improve the situation. There were no apparent mental conflicts or other recognizable causes. There was no improvement after a hormone treatment either.
In accordance with the reaction to Abderhalden's test, the following REGENERESEN were administered:
1 ampule of cerebral cortex, 1 ampule of corpus striatum, 2 ampules of thalamus, 1 ampule of hypothalamus, 1 ampule of kidney, 2 ampules of male anterior lobe of the hypophysis, 1 ampule of suprarenal cortex, 2 ampules of testicle, and 2 ampules of RN 13.
The REGENERESEN were administered at five visits between 27th January and 26th February 1964. After about six weeks, the patient reported on the amazing results and the normalization of his married life. The earlier insufficiency, which had occasionally led to marital strife, had been removed and his performance became almost above-average. Several enquiries over the course of a few months revealed that the increase in potency was still evident and thus normal conditions had been restored.

Emmeniopathy

On 6th August 1959, a 30 year old patient, with a serious disturbance in her menstruation which made her unable to work, had an Abderhalden's test reaction of parathyroid 2, thyroid 1, anterior lobe of the hypophysis 2, hypothalamus 3, suprarenal cortex 2, adrenal medulla 0, ovarian follicle 1. Her menstrual cycle became perfectly normal after a REGENERESEN treatment of parathyroid, thyroid, female anterior lobe of the hypophysis, hypothalamus, suprarenal cortex, ovarian follicle and placenta. The patient is again perfectly fit to go to work. The Abderhalden's reaction of 4th February 1960 was: parathyroid 1, thyroid 0, anterior lobe of the hypophysis 1, hypothalamus 2, suprarenal cortex 1 and ovarian follicle 0.

Mrs. E. S., 58 years old. Depressive emotional condition, menopause (20), disturbed circulation of legs. REGENERESEN therapy on 10th and 11th August 1956: 2 ampules of total ovary, 2 ampules of placenta, 2 ampules of hypothalamus, and 2 ampules of cerebral medulla. The success of the treatment was amazing. After four weeks the patient felt perfectly well and was not longer subjected to moods, hot flushes and feet that would go numb.

Patient Mrs. XX, Frankfurt, born on 15th August 1922.
Diagnosis: severe exhaustion, pains in the region of the spinal cord and labile blood pressure (31).
The patient was suffering from severe exhaustion, slight depressions, tiredness, headaches and pains in the region of the vertebral column. Unstable blood pressure. She was given a regeneration therapy of ten injections which was carried out as follows:
1 ampule each of brain stem, diencephalon, thalamus, hypothalamus, female anterior lobe of the hypophysis, liver, OSTEOCHONDRIN, female placenta, thyroid gland, total ovary, kidney and cerebral cortex REGENERESEN; and 2 ampules each of intima, heart, RN 13 and suprarenal cortex REGENERESEN.
After completing the course of treatment the patient went to Hamburg. About two weeks later she sang at a concert. On her return she was overjoyed to tell me how well she had felt. She said: "Doctor, you really should have seen and heard me. It was fitter than I've ever been for a long time and I only wish you could have witnessed it all in Hamburg, too."
Since then the patient has been coming to my practice at regular intervals to have injections of REGENERESEN. Afterwards, she always feels top fit.
Result: When the patient came to see me about two months after the treatment she was not nearly so restless and created a thoroughly well balanced impression. There was no sign of exhaustion whatsoever. At the last few examinations, her blood pressure was constant and more or less normal, the pulse rate was regular, there was no arrhythmia and the heart sounds were clear. (24th June 1975)

Patient H. H., born on 31st May 1928.
Diagnosis: complex of vitality, pessimism (31).
The patient is an over-zealous civil servant who suffers from complexes about his performance, pessimism and the fact that he is unable to cope with life. These symptoms are exacerbated by an additional impotence. As a result, on 8th February 1967, he was given 2 ampules of anterior lobe of the hypophysis, 2 ampules of spinal cord, 1 ampule of midbrain, 3 ampules of testicle, 3 ampules of prostate gland, 1 ampule of brain stem, 1 ampule of thalamus, and 1 ampule of hypothalamus REGENERESEN.
The treatment was conducted over the course of two weeks. Afterwards, the patient noticed a marked increase in vitality. He no longer had any subjective feelings of anxiety. The slowly decreasing potency over the past seven years had not improved decisively, but "the situation was such that at least sex life interested him again." Due to his distant place of residence, the patient was sent to his family doctor for further treatment, so that it was impossible to make any further finds.

Coronary-artery Insufficiency during the Climacteric Period (4)

Experience has shown that a REGENERESEN treatment during the menopause is likely to prove successful if the induction effect on the ovaries is not prematurely cancelled out by high doses of replacement hormones. Signs of aging can also express themselves in a failure of the cardiovascular system with symptoms such as weakness, easy fatigability, headaches, vertigo, insomnia, dyspnoea when working, nycturia and oedemas. Glucosides are frequently ineffective. The cell-therapy, which influences both the endocrine system and - as experience has shown - the heart muscle too, is in a position

to remove concomitant symptoms as well as depressions and weak concentration. Two examples should suffice as evidence :-

Mrs. B., 54 years old, was treated for two years with various glycosides, first digitalis and then strophantin, but with little success. She was constantly exhausted and short of breath. An examination of the urine revealed protein (+) and urobilinogen (++); in the evening her lower legs and ankles were considerably swollen. In January 1957, she was given injections of placenta, heart and suprarenal cortex, and, at intervals of four weeks, further injections of heart, liver, thyroid gland, hypothalamus, total ovary and placenta. Only then did the patient react to the glycoside and a dehydration ensued. Her weight dropped from 68 to 61 kg. The oedema vanished, and her fluctuating blood pressure remained constant at 130/85. "I feel fine, my heart doesn't trouble me any more." Again a normal intake and elimination of fluid. The patient now looks forward to her lessons as a teacher of vocational studies and takes extensive walks.

Mrs. T., 40 years old, 78 kg., B.P. 160/100, housewife (4 small children), creates the impression of an exhausted woman, with a decompensated circulation and in the swollen pre-menopause stage. Various treatments with glycosides and tonics proved abortive. A therapy of hypothalamus, placenta and heart in June 1957 led to a loss of weight from 78 to 72 kg. due to dehydration; the blood pressure dropped to 140/90. The patient was able to undertake far more work, she has a job during the day and takes in extra work at home in the evenings. She can again ensure that there is enough money for her family.

Patient Mr. XX, headmaster, 61 years of age.
Diagnosis: a drop in vitality during the climacterium virile (31).
The patient had been under treatment for more than twelve years. He suffered principally from myalgia, neuralgia, especially lumbago with irritation of the sciatic root, degenerative ailments of the vertebral column and knee-joint pains on the basis of a gonarthrosis. Anginose complaints with extrasystole and shooting pains in the heart region, disturbance of sleep, excessive fatigability, reduced physical resilience, lack of concentration and lack of drive can be evaluated as a premature decline in physical and mental energy during the climacterium virile.
His activity as a teacher and, until recently, as a sports instructor suffered severely from his ill health and at one time it was thought he might have to give up his profession. He was given the usual medicaments, repeated courses of treatment as spas with hydrotherapeutic applications and then, from 1968 to 1974, a REGENERESEN treatment of RN 13 and OSTEOCHONDRIN.
At intervals of four to five days, he was given a total of 4 ampules of RN 13 and 2 ampules of OSTEOCHONDRIN. This series of injections took place from 1968 to 1970 at intervals of seven to ten months. It was necessary to repeat the series of treatment in the years 1971, 1972, 1973 and 1974.

Even before the termination of the individual series of treatment, the patient reported a marked improvement in his ailments and an increase in his performance, whereby a further encouraging improvement in his general state of health during the following weeks gave him the necessary elan to carry out his profession. With suitable additional treatment, he now feels well able to continue his job as a teacher until the pensionable age of 65.
(5th June 1975)

Patient K. L., 56 years old. Climacterium virile, due to great strain of holding an important position in industry is suffering from a most severe state of physical exhaustion (management disease) (20). In accordance with the Abderhalden's reaction, he was given 1 ampule of cerebral cortex, 2 ampules of liver, 2 ampules of spleen, 1 ampule of gastric mucous membrane, 2 ampules of hypophysis, 2 ampules of hypothalamus, 2 ampules of placenta, and 3 ampules of testicle. The injections were given on 7th and 8th August 1956. The success of the treatment was excellent. To-date the patient has remained devoid of any complaints, can again function well and is able to carry out his gruelling activities to the full once again. Also remarkable is that the libido and potency are again present.

Patient J. G., 49 years old. Severe state of exhaustion, climacterium virile, hypotension, depressed emotional state (20). After injections of cerebellar medulla, spleen, heart muscle, anterior lobe of the hypophysis, suprarenal cortex, testicle and placenta REGENERESEN on 16th and 17th February 1957, the patient has been feeling again fully active since April; in his own words "as if I have been reborn".
To sum up, I can say that the therapeutic effects after a REGENERESEN treatment are equivalent to those after a therapy with dried cells.

Coronary-artery Insufficiency during the Male Involutionary Period

According to information provided by BÖRGER, vascular aging in men takes place three to five years earlier than it does in women (4). Circulatory disturbances, heart trouble, increase in weight, hypertension, enlargement of the liver, decrease in potency, depressions and failure at work are characteristic syndromes of many patients who cannot cope with a responsible position, despite all their energy. Precisely the wide variety of complaints indicates that it is not an isolated organic disease, but rather a general sign of premature aging. This hypothesis is confirmed by the only slight effect of a symptomatic therapy. How REGENERESEN can initiate a revitalisation in such cases is shown in the following example :-

Patient M., 57 years old, director of vocational training school, 173 cm. in height, 103 kg. in weight, B.P. 190/110, protein (+++), urobilinogen (++), complained about dyspnoea as well as pains in the chest, left arm and legs, so that he was forced to stand still (4). He was taken into hospital where he was treated with a diet and strophanthin but with little success. A three week holiday did not improve the complaints either. In January 1957, a REGENERESEN treatment of placenta, heart and hypothalamus; in February, liver, placenta and heart; in March, heart, testicle and liver. Afterwards, another stay in a dietetic sanatorium. Prior to this the blood pressure had already dropped to 160/100 and his weight to 90 kg. Liver still enlarged by the breadth of two fingers. He returned to his job and can now take two hour walks in the Odenwald without having to stand still. Blood pressure 155/95, weight 89 kg., and liver at costal arch. "I'm again enjoying my work."
A check-up after three months. He has been working very hard. "I feel fine." Desires another course of treatment.

Myodegeneration of the Heart

The mother of a doctor, 78 years old, suffered from myodegeneration of the heart (15) with insufficiency and oedema. Macula degeneration on the left,

diabetes mellitus, blood sugar of 180 mg% (15). Her general state of health gradually improved after injections of 1 ampule each of placenta and pancreas as well as 2 ampules of heart REGENERESEN; after about six months the fasting blood sugar value was 118 mg% , even though the patient did not keep to any rigid diet. Improvement in her appetite and circulation, so that it was not necessary to give her any cardiac glycoside. After an injection of 1 ampule each of retina and intima REGENERESEN her acuity of vision ceased to deteriorate; indeed, it even began to improve.

Diabetes

In another case, a 68 year old patient with diabetes mellitus of old age (blood sugar on 7th January 1956: 200 mg%, urinary sugar 1.43, and acetone Ø) (15) was given liver, spleen, pancreas and testicle REGENERESEN on 2nd February 1956.
On 16th February, the blood sugar was 180 mg% and the urinary sugar 1.25; on 23rd February, the blood sugar was 120 mg% and the urinary sugar 0; on 17th March, the blood sugar was 125 mg% and the urinary sugar 0, as they were on 24th March 1956, too.

Patient A. Sp., born on 3rd October 1920.
Diagnosis: hypertension, initial stage of coronary-artery insufficiency, hyperglycemia (31).
The patient has been receiving the following REGENERESEN at monthly intervals: RN 13, heart, liver, pancreas and placenta. The initial blood sugar dropped from 190 mg% to 105 mg%, the cholesterol value remained constant between 250 mg% and 230 mg%, creatinphosphokinase dropped from 28 mu/ml to 12 mu/ml; blood pressure returned to normal.
The patient was given no antidiabetics, he keeps more or less to a diet and takes one tablet of a coronary dilator each day. The patient is again able to work. (16th June 1975)

VI. Allergies

Patient D. C., 42 years of age, female, American nationality, drug used: REGENERESEN.
Diagnosis: bronchial asthma, chronic pansinusitis, nasal polyps (15).
History (important conditions): has trouble with her nose and sinuses for many years. In recent months has started to wheeze and has had a few severe asthmatic attacks. She had had considerable treatment with excision of the nasal polyps several times; she has had no sense of taste or smell for a long time.
Examination (important findings): several nasal polyps; mucous membranes reddened, swollen, moist, with muco-serous discharge. Lungs - sibilant and sonorous rales bilaterally. Laboratory tests: complete blood chemistry - negative except Hbg. 10.0; RBC 4,000,000; WBC 11,200; sed. rate 30, glucose 80. X-rays: G-I tract poor evacuation of barium enema; beginning diverticulitis of descending and sigmoid colon. Gall bladder - negative; chest - moderately increased bronchial and hilar markings, especially lower lungs bilaterally. Sinuses - pansinusitis, especially left frontal and left antrum.
Progress: after a course of REGENERESEN injections and then, later, after additional nasal mucous membrane injections she felt much better; nose and head more open than for a long time; sense of taste and smell had returned; the heavy feeling in her chest disappeared and she had more energy and less fatigue; lungs cleared and no asthmatic rales heard; less nasal reddening; swelling and discharge. Signs of toxicity: none.
Results: excellent temporarily. She finished her REGENERESEN injections in May 1957, then, in the winter, caught several colds with recurrence of her running nose and cough and occasional slight wheezing.

On page 152 of his book, KUGLER (23) describes his experience with REGENERESEN. Even though he was not at an advanced age, he tested RN 13 on himself to determine its compatibility. After several injections he felt remarkably well. And then he began to wonder whether this feeling well could be attributed to a good holiday or perhaps some other factor. Such doubts among critical observers are common. But there was something which could not have had anything to do with his holiday. KUGLER, in his own words, is an allergic person, in particular, he is hypersensitive to ragweed as well as dust in the house. After the REGENERESEN therapy, he had no hay fever at the usual time, even though his friends in the neighbourhood suffered very badly.

VII. Geriatrics

In her "Thèse pour le doctorat en médecine" (Diplôme d'Etat), Paris, 1962, Marie-Chantal WENTZ (44) reported on her studies in geriatric therapy using the preparation RN 13. She ascertained two fundamental principles underlying geriatric therapy with cells.
They cause a stress effect by the placing of a non-specific stimulus: the injected cells or tissue become necrotic. A part of the patient's surrounding musculature is likewise destroyed. Various mediators are released during the decomposition of injected cells or those cells destroyed through the injection.
There is also a phase of revitalisation: the psyche is influenced by the applied therapy. In the opinion of Marie-Chantal WENTZ, however, the patient's increased alertness and growing interest in the environment can probably be traced back to an activation of the cell metabolism. According to DYCKERHOFF's hypothesis, the effect is mainly due to the RNA.
Consequently, Marie-Chantal WENTZ decided to test RN 13 clinically. 30 patients between 65 and 93 years of age were treated with RN 13 and a control group of ten patients were treated concurrently with a placebo. Whereas the proliferation of connective tissue takes place slowly in old age, the involution of specific parenchyma seems to be progressive in contrast. The reduction in protein synthesis is a constant factor in the aging process.

An analysis of the double blind test showed that the administration of RN 13 to old people caused an increase in protein synthesis which manifested itself in a rise in the plasma-protein level, whereas a decrease was noted in the patients taking a placebo. The same applied as regards an improvement in the osteoporosis. Frequently, a positive development in the patient's physical and psycho-emotional condition was observed.

There was an improvement in the ability to walk and renewed control of the sphincter muscle. The patients enterprise and desire to make human contacts increased.

RN 13 (22): so far one injection weekly at the most, but, as a general rule, only every fourteen days; very good results, of which the best evidence is that the patients themselves remember the repeat injection. However, I shall follow your advice and inject daily in suitable cases. In the care of old people I should no longer like to be without RN 13 (in particular, intima, heart, hypothalamus and hypophysis).

Patient K. Z., 64 years old. General signs of overstraining in the process of aging with a reduction in his field of achievements and ability (20). After injections of testicle, placenta, spleen, liver and hypothalamus REGENERESEN on 11th and 12th February 1957, an amazing revitalisation took place. The patient now feels fresh and full of enterprise, so that he can again take charge of his large farm.

Patient A. Sch., female, born on 29th November 1901.
Diagnosis: geriatric troubles (31).
Over the past six months the patient showed a marked reduction in her physical and mental energy and performance. Particularly noticeable are her poor memory, the drop in her powers of observation, complaints about excessive tiredness and depressed emotional state.
A REGENERESEN treatment with RN 13 was conducted between 13th January 1974 and 4th February 1975, involving the injection of 2 ampules every three days. After about half the injections the patient admitted that she was feeling slightly more alert and generally much stronger. She also thought that her memory had improved.
At the end of the treatment, that is, fourteen days after the end of the therapy, the patient created a fresher impression. She is again optimistic, her appetite has improved and she sleeps longer hours at one stretch. In this case, the treatment with RN 13 can be regarded as successful.
(28th May 1975)

Patient Mr. B., 73 years old.
Diagnosis: geriatric troubles (31).
In 1971, he was tired, worn out, in a very depressed state of mind, apathetic, pessimistic, high B.P., irregular bowel movements (nervous bladder), and hyperlipaemia.
No improvement was achieved with the customary medicines. A REGENERESEN treatment was carried out as follows:
On 23rd September, 1 ampule each of heart and male placenta; on 15th October, 1 ampule each of heart and male placenta; and on 29th October, 1 ampule each of heart, testicle and hypothalamus.
16th November. The patient was no longer taking any medicines. The B.P. had normalized. He feels fresh, full of energy and cheerful. No tiredness, sleeps well and bowel movements regular. He is making new travel plans. To-date, his well-being has continued. Mr. B. needs no further treatment.
(30th May 1975)

Patient Mrs. R., 77 years of age.
Diagnosis: arteriosclerosis in accordance with her age, senile heart (31).
The patient complained about insomnia, thought disturbance, hypertension, senile heart, circulatory disturbances, old-age arteriosclerosis and severe varicose veins in the legs. She lives alone and looks after her household herself.
Six single injections of RN 13 at various intervals from October to November 1974. After two injections the patient felt "much better". She now creates a much fresher impression and recounted that she had looked after the house and garden of relatives all on her own.
(30th May 1975)

Cerebral Sclerosis

We have a number of aging sclerotic patients under treatment (4). Among them are some men over 70 who are still working to a very limited extent. Some of them have overcome apoplectic fits. All of them are physically active and show an encouraging mental agility for their age; depressions were generally removed. Small dosages of cardiac glycosides were prescribed with good results. Ever since the treatment, our oldest patient, an 87 year old pharmacist, has recovered from his apathy and now leads an extraordinarily active life.

In the case of patient B., 61 year old businessman, there were signs of a vascular sclerosis (cholesterol of 324 mg% in serum), a moderate pulmonary emphysema, and slight intraventricular conduction defects in the ECG (4). He complained about vertigo, pressure in his head, a constant pain in the left half of his chest, occasionally pain in the left calf. 1.81 metres in height, 81 kg. in weight and B.P. of 130/80; liver not enlarged. No abnormality discovered in the urine; E.S.R. of 4/10. All the complaints, especially the lack of air when breathing deeply, are exacerbated during any mental exertion or excitement; physical exercise improves the condition; sleep was not refreshing. 18th March 1957, administration of heart, intima and cerebral medulla REGENERESEN; 14 days later, brain stem, placenta and liver; 14 days later, hypothalamus, intima and testicles. In the middle of May the patient no longer had any vertigo, he was composed, serene, not so easily excitable, but he remained sensitive to changes in the weather. He needs no hospital treatment in a spa any longer; successful in his profession.

Patient H.B., 68 years old, retired engineer, complained about nocturia, shortness of breath, stiff gait, difficult breathing, lack of interest, inactive pedant (4). Chronic bronchitis. Blood pressure of 155/110, E.S.R. of 9/16, 1.70 metres in height, 67 kg. in weight. In March 1957, injections of prostate gland, heart and brain stem REGENERESEN; after 14 days, heart, placenta and intima; after 14 days, placenta, lung and spleen. The bladder troubles at night were cleared up completely and there was no longer any difficulty in breathing. The patient is satisfied, does a lot of travelling and shows a greater intellectual interest in his surroundings. Blood pressure of 140/90.

Patient A., female, 79 years of age.
Diagnosis: severe cerebral sclerosis with a state of agitation and disorientation (31).
Therapy: 5 ampules each of cerebral cortex, thalamus, hypothalamus and anterior lobe of the hypophysis REGENERESEN.
Result: greater receptivity, excitation and improved degree of responsiveness.
(23rd May 1975)

Diagnosis: premature cerebral aging (31).
A 59 year old patient (civil servant in a responsible position) with a depressed emotional condition and a premature cerebral senescence with his mental alertness, concentration and memory beginning to fail.
The patient was initially treated with the usual antidepressive drugs. However, since the attending doctor and the patient were not satisfied with the effects of these medicaments, especially as regards the psychic-cerebral functions, it was decided to resort to a REGENERESEN treatment with RN 13, with which good practical experience had been gained in the past.
The patient received a total of sixteen ampules of the preparation (1 ampule per day). After about fourteen days (calculated from the first day of the injections) both the patient and his friends and relatives noticed agility and the decreased bodily functions mentioned above. There was also a further improvement in his still not quite stable emotional condition. Period of treatment from 30th October 1973 to 26th February 1974.
(28th May 1975)

Patient Mr. Sch., 70 years of age.
Diagnosis: cerebral sclerosis, general symptoms of wear (31).
In the spring and summer of 1974, I treated the over 70 year old, who until then had been mentally alert, with REGENERESEN on account of an incipient cerebral sclerosis, slight hypertension, with general physical exhaustion and signs of wear.
The following REGENERESEN were used:
1 ampule each of intima, connective tissue, cerebral hemisphere, cerebellar cortex, cerebellar medulla, thalamus, hypothalamus, anterior lobe of hypophysis, diencephalon, epiphysis, cerebral cortex and kidney; 2 ampules of RN 13.
I repeated this course of treatment after about eight weeks. As a result of this REGENERESEN treatment, there was an improvement in the slight hypertension and the incipient cerebral sclerosis; likewise, there was no longer any indication of the pronounced physical exhaustion, nor of the wear symptoms.
After this treatment, the patient felt much more alert and full of enterprise.
(3rd June 1975)

VIII. Miscellaneous

Particularly difficult are those patients who complain in all earnestness about every possible ache and pain; they are credible but the causes are difficult to pin down. They crowd into the waiting rooms and then the consulting rooms of the doctors. Certainly, no-one would care to draw up any statistics. And how foolish it is to remove REGENERESEN from the list of drugs prescribed by members of the panel doctors' association on the basis of simple-minded reasoning. There are many examples of the effectiveness and mode of action of REGENERESEN. An experienced REGENERESEN therapist, Dr. C. O. Kl. (22) :-

Patient Alfred H., self-employed businessman, manager. Under treatment since 9th April 1953, severe systemic disturbance as a result of fleck-typhus, tularaemia, infectious hepatitis in the battlefield. A wide range of prior treatment, therapeutic tests with the methods of customary medicine and of outsiders, stays at well-known clinics and sanatoria. Treatment with living cells of unknown composition but without success. On 27th January 1956, injections of suprarenal cortex, thalamus, hypothalamus, spleen, heart, stomach, small intestine and male placenta REGENERESEN; very successful and condition has remained constant for about six months.
December 1974: today, virtually healthy again; very trying patient, a clever businessman who was in a medical unit (!) during the 2nd World War, a "stress fanatic", must be subjected to some sort of stress every day.

Patient Heinz H., born on 8th September 1932, married, very hard worker, severe incretory disturbances, whereby a hypophysis-diencephalic disturbance was assumed, with systolic blood-pressure values of upto 220 mm. Hg. Wide variety of previous treatment. On 27th March, injections of REGENERESEN: intima, anterior lobe of the hypophysis, hypothalamus, male placenta, and suprarenal cortex. A significant improvement set in after a few days; patient was again able to undertake the heaviest kind of work and felt well. On 30th July, three ampules of placenta at short intervals. His state of well-being continued. December 1974: patient has been virtually devoid of complaints since 1955.

Patient Dr. Fritz L., born on 24th February 1919, auditor, "manager".
Under treatment since 10th March 1955, recurrent duodenal ulcer; on 28th April, REGENERESEN injections of hypothalamus, suprarenal cortex, adrenal medulla, small intestine, cerebellum, male placenta. Afterwards, completely free of all complaints.
December 1974: virtually devoid of all symptoms after nineteen years.

Patient Günther Sch., 16th February 1932, precision instrument-maker, married, family life intact. Under treatment since 23rd April 1954 after years of treatment elsewhere for asthenia and a tendency to duodenal ulcers.
On 26th July 1956, injections of REGENERESEN: male placenta, hypophysis, hypothalamus, gall bladder, stomach, pancreas, spleen, brain stem and small intestine. Afterwards, virtually healthy again.
December 1974: ambitious, detached himself from his parents' milieu; under treatment for a further two duodenal ulcers, which the X-ray photograph showed were "healed in no time"; free of all complaints for many years, fully active at work in a leading position, weight in accordance with his age and height.

Patient Alfred W., born on 1st April 1921, industrial worker, married.
Under treatment since 9th March 1953. Due to unwise behaviour (cigarettes and alcohol), frequently recurring duodenal ulcer. Earlier osteomyelitis. Tendency towards eczema. On 19th April 1956, injections of REGENERESEN: male placenta, suprarenal cortex, hypothalamus, brain stem and colon. Treatment remarkably successful. December 1974: treated regularly from 1953 to 1958, brought up conscious of his health; virtually free of all complaints.

Patient Rosel R., born on 19th January 1923, married, housewife, unskilled worker. Under treatment since 19th July 1955, emaciation, hyperthyreosis, hypotension, tendency towards duodenal ulcers, severe neurocirculatory dysregulation, chronic appendicitis, a long-standing severe condition of exhaustion and highly resistant to therapies. Treatment with REGENERESEN on 28th July 1956: female placenta, suprarenal cortex, spleen, pancreas, intima, heart, brain stem and hypothalamus. The patient began to feel better

after a few days and her weight increased slowly but constantly. She reached a biological dynamic equilibrium after about five months. December 1974: an extremely difficult patient and treating her was exhausting, because, unknown to all parties, she was using any number of therapists. A vigorous (exlucisve) treatment from 1953 to 1957. Virtually free of all symptoms since then. The patient now lives in another district but she visits my surgery regularly.

Patient Hilde B., born on 4th April 1913, married, housewife. Under treatment since 30th October 1954. Previous treatment for many years due to first degree senso-vegetative depressions and, in part, organic disorders. Tendency to develop duodenal ulcers. Her treatment covered all fields of medicine and the accessible methods of outsiders, but without any significant success. A REGENERESEN treatment on 19th March 1956: female placenta, hypothalamus, suprarenal cortex, ovarian follicle, heart and intima; patient felt extremely well until the end of May.
December 1974: no success, weak.

Patient Maria Sch., born on 12th September 1909, had been treated for many years previously; a severe latent tetany, namely attributed to a dysregulation of circulation with irregular and very severe attacks, also of unconsciousness. Treated elsewhere with living cells, but with only moderate success. After an Abderhalden's test, REGENERESEN injections on 30th November 1956: parathyroid, thyroid gland, heart, intima, hypothalamus, spleen, suprarenal cortex and female placenta. An immediate and lasting improvement in her complaints which remained for one year now.
December 1974: classic case (from Eastern Germany) of severe, completely obscure illness which could not be influenced even by the university clinic which showed great interest in the case. Patient experienced a deep shock in the waiting room; relatives described in detail the event which had occurred before. After the customary shock treatment, there was intensive artificial respiration with oxygen-carrying aerosols of salts from rare earths, which was followed by an intensive REGENERESEN treatment. An immediate improvement in all the symptoms (checked in hospital), and the very thankful patient returns for a check-up twice a year.

Patient Bernhard Sch., born on 13th May 1917, businessman in the technical field, married. Night-blindness, renal calculi, endarteritis and myositis. The patient, who was keen to work, was constantly suffering from attacks which could not be clarified beyond doubt even by a specialist clinic. After the Abderhalden's test on 5th July 1956, he was given a course of the appropriate REGENERESEN. Afterwards the attacks ceased as did the disposition to suffer from attacks. The patient felt well and was able to work without any restrictions; this situation remained unchanged from about eighteen months after the REGENERESEN injections up to the date of this report. Particularly noticeable and remarkable is the fact that the night-blindness, which was confirmed repeatedly by eye specialists, virtually disappeared after the REGENERESEN treatment, according to finds made in an eye hospital.
December 1974: poly-pragmatic diagnoses from a large number of general practices and clinics. Hypoxaemia and night-blindness; neuro-vegetative dystonia. Success with treatment: false diagnosis of night-blindness in one clinic, removal confirmed in the control clinic. Fully active since 1957.
Dr. C.O.Kl. (22) writes :- "I have administered REGENERESEN in many hundreds of cases and have never noticed any allergic reactions."

Indications and Therapy Proposals for REGENERESEN(R)

	Primarily disturbed organs	Secondarily disturbed organs
absence of menstruation amenorrhea	anterior lobe of hypophysis female, ovary	thyroid gland, diencephalon placenta female
achylia gastrica, -pancreatic-	stomach, pancreas, small intestine, artery	diencephalon, hypophysis ovary / testicle
acne	connective tissue *) ovary, liver, hypothalamus, hypophysis	skin, placenta
Addison's disease	suprarenal gland, thymus, lymph node	bone-marrow, spleen
adiposis, lipomatosis, obesity	midbrain, diencephalon, anterior lobe of hypophysis	thyroid gland, epiphysis, (pineal gland), liver, ovary / testicle
adiposis hepatica, fatty degeneration of the liver	liver, pancreas, spleen	thalamus,hypothalamus, anterior lobe of hypophysis
adenexitis, chronic inflammation of the appendages	ovary, thymus, lymph node	suprarenal gland, placenta
adrenal-insufficiency, hypadrenia, hypoadrenalis	suprarenal cortex suprarenal medulla	anterior lobe of hypophysis, placenta
aleukia hemorrhagica, myelophthisis	bone-marrow, spleen, liver	connective tissue, suprarenal cortex
allergies	parathyroid, thyroid gland, liver, lymphnode	thalamus, hypothalamus, anterior lobe of hypophysis, ovary/testicle
amenorrhea, absence of menstruation	anterior lobe of hypophysis female, ovary	thyroid gland, diencephalon, placenta female
anaphrodisia, frigidity, sexual coldness	ovary/testicle, anterior lobe of hypophysis, diencephalon	spinal cord, corpus striatum, midbrain, placenta
anemia	blood, bone-marrow, liver, spleen	connective tissue *), placenta by auto-immune anemia: thymus lymph node

*)mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
angina pectoris, stenocardia	heart, artery	thalamus, hypothalamus anterior lobe of hypophysis, suprarenal cortex
apareunia, impotence, impotentia coeundi	testicle, anterior lobe of hypophysis, hypothalamus	placenta
apoplectic fit, apoplexy, stroke	corpus striatum, cerebral hemisphere, artery	thalamus, hypothalamus, anterior lobe of hypophysis
apoplexy, apoplectic fit, stroke	corpus striatum, cerebral hemisphere, artery	thalamus, hypothalamus, anterior lobe of hypophysis
arteriosclerosis	RN13	cerebral hemisphere, bone-marrow, artery, connective tissue *),thymus, lymph node
arteriosclerosis coronary	RN 13, heart, artery, connective tissue *)	diencephalon, anterior lobe of hypophysis, suprarenal cortex
arthrosis	1) intervertebral disc, cartilage, synovia, osteoblast, placenta or 2) OSTEOCHONDRIN, osteoblast	RN 13, thyroid gland, suprarenal cortex - caused by endocrine glands: involved glands
arthrosis of the hip joint, coxarthrosis	1) OSTEOCHONDRIN, osteoblast, connective tissue *) or 2) intervertebral disc, cartilage, synovia, osteoblast, connective tissue *)	thyroid gland, suprarenal cortex, suprarenal medulla
asthma bronchiale, bronchial allergy	suprarenal cortex, thyroid gland, parathyroid, diencephalon	bronchi, lung , thymus lymph node
ataxia	corpus striatum, spinal cord, cerebellar cortex	cerebellar medulla, thalamus, hypothalamus, anterior lobe of hypophysis
atrophic rhinitis, coryza foetida, ozena	nasal mucous membrane, lymph node, spleen	thymus, placenta

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
atrophy	atrophic organs	RN13, thalamus, hypothalamus, anterior lobe of hypophysis
atrophy of the brain, cerebro-atrophy	cerebral hemisphere, cerebellum	midbrain, diencephalon
autonomic instability, disturbance of the autonomic nervous system, vegetative disorder	thalamus, hypothalamus, midbrain, diencephalon, anterior lobe of hypophysis	the organs, which are effected respective
barrenness female sterility female	ovary, uterus, anterior lobe of hypophysis fem.	thyroid gland, suprarenal gland, placenta female
barrenness female sterility male	testicle, anterior lobe of hypophysis male	thyroid gland, suprarenal gland, placenta male
Basedow's disease, exophtalmic goitre, Grave's disease	anterior lobe of hypophysis, thyroid gland, thymus, spleen	pancreas, suprarenal cortex, heart
Beard's disease, nervous debility neurasthenia	RN 13, thalamus, hypothalamus, anterior lobe of hypophysis	diencephalon, ovary/testicle
bronchial allergy, asthma bronchiale	suprarenal cortex, thyroid gland, parathyroid, diencephalon	bronchi, lung, thymus, lymph node
bronchiectasia chronic, bronchiectasis chronic	lung, bronchi	suprarenal gland, placenta
bronchitis chronic	bronchi, lung, thymus, spleen	suprarenal gland, anterior lobe of hypophysis, connective tissue *)
cardiac infarction, myocardial infarction	1) RN 13 or 2) heart, artery, connective tissue *)	diencephalon, anterior lobe of hypophysis, suprarenal cortex
cerebral sclerosis, sclerencephaly	1) RN 13 or 2) intima, connective tissue *) , cerebral hemisphere	cerebellum, thalamus, hypothalamus, anterior lobe of hypophysis, corpus striatum

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
cerebro-atrophy, atrophy of the brain	cerebral hemisphere, cerebellum	midbrain, diencephalon
cervical syndrome	OSTEOCHONDRIN, connective tissue *)	spinal cord
change of life, climacteric period fem., menopause	1) RN 13 or 2) ovary, anterior lobe of hypophysis	epiphysis, diencephalon, suprarenal gland, placenta
cholecystopathy, gall-bladder disease	gall-bladder, liver	stomach, pancreas, small intestine, colon
chorioids, sclerosis of...	RN 13, chorioidea, connective tissue *)	intima, retina, placenta
chronic inflammation of the appendages, adnexitis, chronic	ovary, thymus, lymph node	suprarenal gland, placenta
chryptorchidism, chryptorchism	testicle, anterior lobe of hypophysis male, hypothalamus	addtive: diencephalon
circulatory disturbance, disturbed blood supply	1) RN 13 or 2) intima,heart,placenta	thalamus, hypothalamus, anterior lobe of hypophysis
claudication, intermittent...	1) RN 13 or 2) intima,heart,midbrain, connective tissue *)	diencephalon, anterior lobe of hypophysis,suprarenal gland
climacteric period fem. change of life, menopause	1) RN 13 or 2) ovary, anterior lobe of hypophysis	epiphysis, diencephalon suprarenal gland, placenta
climacteric period male, climacterium virile	1) RN 13 or 2) testicle, anterior lobe of hypophysis male	epiphysis, diencephalon, suprarenal gland, placenta male
colitis	thymus, lymph node, small intestine, colon	liver, pancreas, anterior lobe of hypophysis, ovary/testicle
complex gastrointestinal	stomach,small intestine, colon, liver, pancreas	thalamus, hypothalamus, anterior lobe of hypophysis
condensing osteitis, eburnation, osteosclerosis	1) parathyroid, osteoblast, bone marrow or 2) RN 13	OSTEOCHONDRIN, connective tissue *)

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
coxarthrosis, arthrosis of the hip joint	1) OSTEOCHONDRIN, osteoblast, connective tissue *) or 2) intervertebral disc, cartilage, synovia, osteoblast, connective tissue *)	thyroid gland, suprarenal cortex, suprarenal medulla
cretinism	anterior lobe of hypophysis, thyroid gland, ovary/testicle	cerebral hemisphere, midbrain, placenta
damage of disc intervertebralis, injury of intervertebral disc	1) intervertebral disc, vertebra, cartilage synovia, connective tissue *) or 2) OSTEOCHONDRIN vertebra	
damage of liverparenchyma, liver lesion parachymatous	liver, pancreas	stomach, small intestine, colon, bone marrow
deafness, labyrinthine.. -degenerativ-	AU 4, placenta	RN 13
deafness, senile, presbyacousis	AU 4	RN 13
decrease in vitality	1) ovary/testicle, hypothalamus, hypophysis or 2) RN 13	placenta, suprarenal gland
defective hearing, hearing defect, impairment of hearing(conditioned by toxic or medicamentous	AU 4, placenta	RN 13
depression, exogenetic	thalamus, hypothalamus	suprarenal gland, thymus
dermatosclerosis, scleroderma, slerodermitis	skin, lymph node, thymus, spleen, connective tissue *)	thalamus, hypothalamus anterior lobe of hypophysis, placenta
developmental disturbance, dysontogenesis impaired development	thalamus, hypothalamus, anterior lobe of hypphysis, thymus	effected cerebral parts, epiphysis, ovary/testicle

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
diabetes insipidus	posterior lobe of hypophysis	thalamus, hypothalamus
diabetes mellitus of old age	pancreas, anterior lobe of hypophysis, hypothalamus	serious cases not to effect in this manner
disc,luxation of intervertebral... -after treatment-	1) OSTEOCHONDRIN vertebra, connective tissue *) or 2 intervertebral disc, cartilage, synovia, vertebra, connective tissue *)	
disorder of fecundity, disorder of fertility	anterior lobe of hypophysis, ovary/testicle	thalamus, hypothalamus, thyroid gland, corpus luteum
disseminated sclerosis, multiple sclerosis	corpus striatum, medulla oblongata, spinal cord, lymph node,thymus	cerebral hemisphere, cerebellar cortex, bone-marrow, placenta
disturbance of growth	anterior lobe of hypophysis, thyroid gland	diencephalon, suprarenal gland, ovary/testicle
disturbance of potency	testicle, anterior lobe of hypophysis male, placenta male	thalamus, hypothalamus
disturbance of the autonomic nervous system, autonomic instability, vegetative disorder	thalamus, hypothalamus, midbrain, diencephalon, anterior lobe of hypophysis	the organs, which are effected respective
disturbed blood supply, circulatory disturbance	1. RN 13 or 2. intima, heart, placenta	thalamus, hypothalamus, anterior lobe of hypophysis
Down's syndrome mongolian idiocy mongolism	cerebral hemisphere midbrain, diencephalon, anterior lobe of hypophysis, thyroid gland	suprarenal gland, thymus epiphysis (pineal gland), placenta
dropsy of the brain, hydrocephalus	cerebral hemisphere, cerebellum	corpus striatum, midbrain diencephalon, anterior lobe of hypophysis
duodenal ulcer	stomach, liver, pancreas	diencephalon, hypophysis, placenta

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
dwarfism , nanism	anterior lobe of hypophysis, thymus, thyroid gland	diencephalon, ovary/testicle, placenta
dysbasia	1) RN 13 or 2) intima, heart, midbrain, connective tissue *)	thalamus, hypothalamus, anterior lobe of hypophysis
dysmenorrhea, menalgia	ovary, anterior lobe of hypophysis female	uterus, placenta female connective tissue *)
dysontogenesis, developmental disturbance, hypogenesis, impaired development	thalamus, hypothalamus, anterior lobe of hypophysis, thymus	effected cerebral parts, epiphysis(pineneal gland), ovary/testicle
dyspepsia, weak stomach	stomach, pancreas, small intestine, colon	thalamus, hypothalamus, anterior lobe of hypophysis
eburnation, condensing osteitis, osteosclerosis	1) parathyroid, osteoblast, bone marrow or 2 RN 13	OSTEOCHONDRIN connective tissue *)
eclampsia	midbrain, corpus striatum, liver, kidney, placenta	cerebral cortex diencephalon, anterior lobe of hypophysis
eczema	skin, suprarenal gland, liver	diencephalon, hypophysis, placenta
emaciation	anterior lobe of hypophysis, thalamus, hypothalamus	epiphysis (pineal gland) ovary/testicle, suprarenal gland, placenta
emphysema	lung, bronchi, heart, intima, connective tissue *)	1)(senile emphysema) RN 13 2) suprarenal medulla, thyroid gland
encephalitis, inflammation of the brain	cerebral hemisphere, diencephalon	thymus, lymph node, placenta
endometritis, chronic	ovary, suprarenal gland, hypophysis	diencephalon, placenta
enteritis, chronic	small intestine, colon, liver, pancreas	suprarenal gland, ovary/testicle
exophtalmic goitre, Basedow's disease, Grave's disease	anterior lobe of hypophysis, thyroid gland, thymus, spleen	pancreas , suprarenal cortex, heart

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
fatty degeneration of the liver, adiposis hepatica	liver, pancreas, spleen	thalamus, hypothalamus, anterior lobe of hypophysis
fecundity, disorder of fertility, disorder of	anterior lobe of hypophysis, ovary/testicle	thalamus, hypothalamus, thyroid gland, corpus luteum
female, climacteric period... change of life, menopause	1) RN 13 or 2) ovary, anterior lobe of hypophysis	epiphysis (pineal gland), diencephalon, suprarenal gland, placenta
fractures	osteoblast, bone-marrow, intima	anterior lobe of hypophysis, thyroid gland, placenta
frigidity, anaphrodisia, sexual coldness	ovary/testicle, anterior lobe of hypophysis, diencephalon	spinal cord, corpus striatum, midbrain, placenta
gall-bladder disease, cholecystopathy	gall-bladder, liver	stomach, pancreas, small, intestine, colon
gastritis	stomach, liver, pancreas	placenta
gastro-intestinal, complex...	stomach small intestine, colon, liver, pancreas	thalamus, hypothalamus, anterior lobe of hypophysis
geriatrics	RN 13	
goitre, struma	thyroid gland, parathyroid, anterior lobe of hypophysis	heart, kidney, suprarenal gland
Grave's disease, exophtalmic goitre, Basedow's disease	anterior lobe of hypophysis, thyroid gland, thymus, spleen	pancreas, suprarenal cortex heart
growth, disturbance of...	anterior lobe of hypophysis, thyroid gland	diencephalon, suprarenal gland, ovary/testicle
hearig defect, impairment of hearing, defective hearing (conditioned by toxic or medicamentous	AU 4, placenta	RN 13
hepatitis, chronic	liver, stomach suprarenal gland	pancreas, placenta

	Primarily disturbed organs	Secondarily disturbed organs
hepatosis	liver, spleen	stomach, pancreas, small intestine, colon
hives, nettle vash	suprarenal cortex, thymus	parathyroid, ovary/testicle
hydrocephalus, dropsy of the brain	cerebral hemisphere cerebellum	corpus striatum, midbrain, diencephalon, anterior lobe of hypophysis
hypadrenia, adrenal-insufficiency hypoadrenalism	suprarenal cortex suprarenal medulla	anterior lobe of hypophysis, placenta
hyperemesis	thalamus, hypothalamus, anterior lobe of hypophysis, placenta	liver, pancreas, small intestine
hypermenorrhea	ovary, anterior lobe of hypophysis female	thyroid gland, uterus
hypertension	heart, kidney, intima	thalamus, hypothalamus, anterior lobe of hypophysis
hypertrophy of the prostate, prostatic hypertrophy	testicle, anterior lobe of hypophysis male, hypothalamus	ovary, suprarenal cortex, placenta
hyperthyreosis, hyperthyroidism	anterior lobe of hypophysis, thyroid gland, parathyroid	pancreas, suprerenal cortex, heart
hypoadrenalism, adrenal-insufficiency, hypadrenia	suprarenal cortex, suprarenal medulla	anterior lobe of hypophysis, placenta
hypogenesis, dysontogenesis, impaired development, developmental disturbance	thalamus, hypothalamus, anterior lobe of hypophysis, thymus	effected cerebral parts, epiphysis (pineal gland), ovary/testicle
hypogeusia	temporal lobe of the brain, midbrain, connective tissue *)	thalamus, placenta
hyposmia	temporal lobe of the brain, midbrain, connective tissue *) , nasal mucous membrane	thalamus, placenta
hypotensive syndrome hypotension	heart, liver suprarenal gland, placenta	thalamus, hypotehalamus, anterior lobe of hypophysis

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
hypothyreosis, hypothyroidism	anterior lobe of hypophysis, thyroid gland, parathyroid	suprarenal cortex, suprarenal medulla
idiocy, idiotism	cerebral hemisphere, frontal lobe of the brain, anterior lobe of hypophysis	midbrain, cerebellum corpus striatum, diencephalon
impaired hearing -acute-	AU 4, placenta	thalamus, hypothalamus, anterior lobe of hypophysis
impaired development, developmental disturbance, dysontogenesis, hypogenesis	thalamus, hypothalamus, anterior lobe of hypophysis, thymus	effected cerebral parts, epiphysis (pineal gland), ovary/testicle
impaired potency, disturbance of potency	testicle, anterior lobe of hypophysis male, placenta male	thalamus, hypothalamus
impairment of hearing, defective hearing, hearing defect -conditioned by toxic or medicamentous-	AU 4, placenta	RN 13
impotence, impotentia coeundie, apareunia	testicle, anterior lobe of hypophysis male, hypothalamus	placenta
infantilism, puerilism	anterior lobe of hypophysis, thyroid gland, parathyroid	ovary/testicle, thymus, hypothalamus, thalamus
inflammation of the appendages, adnexitis chronic	ovary, thymus, lymph node	suprarenal gland, placenta
inflammation of the brain, encephalitis	cerebral hemisphere, diencephalon	thymus, lymph node, placenta
injured myocardium	liver, connective tissue *)	diencephalon, suprarenal gland
injury of intervertebral disc, damage of disc intervertebralis	1) intervertebral disc, vertebra, cartilage, synovia, connective tissue *) or 2) OSTEOCHONDRIN, vertebra	

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
insufficiency of the spinal column, vertebral insufficiency	1) OSTEOCHONDRIN, vertebra, connective tissue *) or 2) intervertebral disc, vertebra, synovia cartilage, connective tissue *)	spinal cord, bone-marrow, parathyroid, ovary/testicle
intermittent claudication	1) RN 13 or 2) internal vessel coat, heart, midbrain, connective tissue *)	diencephalon, anterior lobe of hypophysis, suprarenal gland
intervertebral disc, damage of... , injury of intervertebral disc	1) intervertebral disc, vertebra, synovia cartilage, connective tissue *) or 2) OSTEOCHONDRIN, vertebra	
labyrinthine deafness -degenerative-	AU 4, placenta	RN 13
lack of thrombocytes, thrombopenia	bone-marrow, liver, thymus, spleen	anterior lobe of hypophysis, placenta
lateral sclerosis	spinal cord, cerebellum, midbrain, lymph node, thymus	musculature, medulla oblongata
leucemia, leucocythemia	bone-marrow, spleen, thymus, connective tissue *)	ovary/testicle
lipomatosis, adiposis, obesity	midbrain, diencephalon, anterior lobe of hypophysis	thyroid gland, epiphysis, (pineal gland), liver, ovary/testicle
Little's disease	cerebral hemisphere, cerebellum, spinal cord	medulla oblangata, thalamus, hypothalamus, anterior lobe of hypophysis
liver lesion parenchymatous, damage of liver-parenchyma	liver, pancreas	stomach, small intestine, colon, bone-marrow
luxation of intervertebral disc -after treatment-	1) OSTEOCHONDRIN, vertebra, connective tissue *) or 2) intervertebral disc, cartilage, synovia, vertebra, connective tissue *)	
magersucht, emaciation	anterior lobe of hypophysis, thalamus, hypothalamus	epiphysis, (pineal gland), ovary/testicle, suprarenal gland, placenta
menalgia, dysmenorrhea	ovary, anterior lobe of hypophysis female	uterus, placenta, connective tissue *)

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
Menière's disease	temporal lobe of the brain, cerebellum, connective tissue *)	midbrain, spleen, serious cases: AU 4
menopause, change of life, female climacteric period	1) RN 13 or 2) ovary, anterior lobe of hypophysis female	epiphysis (pineal gland), diencephalon, suprarenal gland, placenta
mental defect, oligophrenia	cerebral cortex, cerebral medulla, thyroid gland	thalamus, hypothalamus, anterior lobe of hypophysis
mongolian idiocy, mongolism, Down's syndrome	cerebral hemisphere, midbrain, diencephalon, anterior lobe of hypophysis, thyroid gland	suprarenal gland, thymus, epiphysis (pineal gland), placenta
multiple sclerosis, disseminated sclerosis	corpus striatum, medulla oblongata, spinal cord, thymus, lymph node	cerebral hemisphere, cerebellar cortex, bone-marrow, placenta
muscular atrophy, myatrophy, myodegeneration	musculature, diencephalon, anterior lobe of hypophysis, lymph node, thymus	corpus striatum, spinal cord
myelophtisis, aleukia hemorrhagica	bone-marrow, spleen, liver	connective tissue, suprarenal cortex
myocardial infarction, cardiac infarction	1) RN 13 or 2) heart, artery, connective tissue *)	diencephalon, anterior lobe of hypophysis, suprarenal cortex
myocardium, injured...	heart, liver, connective tissue *)	diencephalon, suprarenal gland
myodegeneration, muscular atrophy, myatrophy	musculature,diencephalon, anterior lobe of hypophysis, lymph node, thymus	corpus striatum, spinal cord
myxedema	thyroid gland, anterior lobe of hypophysis	hypothalamus, placenta
nanism, dwarfism	anterior lobe of hypophysis, thymus, thyroid gland	diencephalon, ovary/testicle placenta
nettle vash, hives, urticaria	suprarenal cortex, thymus	parathyroid, ovary/testicle

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
hay fever, pollenosis	parathyroid, thyroid gland, thymus, suprarenal gland, lymph node, nasal mucous membrane	1) thalamus, hypothalamus, anterior lobe of hypophysis, ovary/testicle or 2) bronchi, lung, connective tissue *)
nephritis, chronic	kidney, suprarenal gland	hypothalamus, placenta
nephrosis	kidney, suprarenal cortex, thyroid gland	hypothalamus, anterior lobe of hypophysis, placenta
neurasthenia, nervous debility, Beard's disease	RN 13 , thalamus, hypothalamus, anterior lobe of hypophysis	diencephalon, ovary/testicle
obesity, adipositas, lipomatosis	midbrain, diencephalon, anterior lobe of hypophysis	thyroid gland, epiphysis (pineal gland), liver, ovary/testicle
oligophrenia mental defect	cerebral cortex, cerebral medulla, thyroid gland	thalamus, hypothalamus, anterior lobe of hypophysis
osteochondrosis	1) OSTEOCHONDRIN vertebra, connective tissue *) or 2) intervertebral disc, cartilage, synovia, vertebra, connective tissue *)	bone-marrow. parathyroid, ovary/testicle
osteoporosis	1) RN 13, bone-marrow or 2) OSTEOCHONDRIN, osteoblast, connective tissue *)	parathyroid, ovary/testicle
osteosclerosis, eburnation, condensing osteitis	1) parathyroid, osteoblast, bone-marrow or 2) RN 13	OSTEOCHONDRIN connective tissue *)
ovarian insufficiency	ovary, anterior lobe of hypophysis female	thalamus, hypothalamus, thyroid gland
ozena, coryza foetida, atrophic rhinitis	nasal mucous membrane , lymph node, spleen	thymus, placenta
pancreopathy	pancreas	liver, stomach, small intestine, colon

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
paralysis, palsy	cerebral cortex cerebral medulla, cerebellar cortex, cerebellar medulla	midbrain, corpus striatum, spinal cord, medulla oblongata, thalamus, hypothalamus, anterior lobe of hypophysis
Parkinson's disease, parkinsonism shaking palsy	corpus striatum, cerebellar cortex, cerebellar medulla, medulla oblongata, thalamus, hypothalamus	midbrain, anterior lobe of hypophysis
parodontosis	connective tissue *) osteoblast	ovary/testicle placenta
pneumonia, chronic	lung, connective tissue *), placenta	suprarenal gland, ovary/testicle
pollenosis, hay fever	parathyroid, thyroid gland, thymus, suprarenal gland, lymph node, nasal mucous membrane	1. thalamus, hypothalamus anterior lobe of hypophysis, ovary/testicle , or 2. bronchi, lung, connective tissue *)
polyarthritis, chronic rheumatoid arthritis	synovia, connective tissue *) suprarenal gland, thymus	parathyroid, hypothalamus, ovary/testicle, placenta
potency, disturbance of.. impaired potency	testicle, anterior lobe of hypophysis male, placenta male	thalamus, hypothalamus
presbyacousis, deafness, senile	AU 4	RN 13
prostatic hypertrophy, hypertrophy of the prostate	testicle, anterior lobe of hypophysis male, hypothalamus	ovary, suprarenal cortex placenta
prostatitis, chronic	prostate gland, testicle, connective tissue *) placenta	ovarian follicle, suprarenal gland
powered resistance	connective tissue *), bone-marrow, thymus, spleen, lymph node	suprarenal gland, placenta
puerilism, infantilism	anterior lobe of hypophysis, thyroid gland, parathyroid	ovary/testicle, thymus hypothalamus, thalamus
pyelitis, chronic	kidney, connective tissue, suprarenal cortex	hypothalamus, placenta

*) mesenchyma

	Primarily disturbe organs	Secondarily disturbed organs
radiation, damge radiolesion	bone-marrow, thymus, blood, connective tissue *)	liver, spleen, lymph node
retinopathy	retina, artery, connective tissue *)	midbrain, diencephalon
rheumatoid arthritis, polyarthritis, chronic	synovia, connective tissue *), suprarenal gland, thymus	parathyroid, hypothalamus ovary/testicle, placenta
restistance, powered...	connective tissue *) bone-marrow, thymus, spleen, lymph node	suprarenal gland, placenta
sclerencephaly cerebral, sclerosis	1) RN 13 or 2) intima, connective tissue *), cerebral hemisphere	cerebellum, thalamus, anterior lobe of hypophysis, corpus striatum
sclerodermia, dermatosclerosis, sclerodermitis	skin, lymph node, thymus, spleen, connective tissue *)	thalamus, hypothalamus, anterior lobe of hypophysis, placenta
sclerosis of chorioids	RN 13, chorioidea connective tissue *)	intima, retina, placenta
seborrhea	skin, thyroid gland	anterior lobe of hypophysis, epiphysis (pineal gland) ovary/testicle, placenta
senile, deafness presbyacousis	AU 4	RN 13
sexual coldness, anaphrodisia , frigidity	ovary/testicle, anterior lobe of hypophysis, diencephalon	spinal cord, corpus striatum, midbrain, placenta
shaking palsy, Parkinson's disease, parkinsonism	corpus striatum, cerebellar cortex, cerebellar medulla, medulla oblongata, thalamus, hypothalamus	midbrain, anterior lobe of hypophysis
spinal column, insufficiency of the... vertebral insufficiency	1) OSTEOCHONDRIN, vertebra, connective tissue *) or 2) intervertebral disc, vertebra, cartilage, synovia, connective tissue *)	spinal cord, bone-marrow, parathyroid, ovary/testicle

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
spondylosis	1) OSTEOCHONDRIN vertebra, connective tissue *) or 2) intervertebral disc, cartilage, vertebra, connective tissue *)	bone-marrow, parathyroid ovary/testicle
stenocardia, angina pectoris	heart, artery	thalamus, hypothalamus, anterior lobe of hypophysis, suprarenal cortex
sterility, female barrenness, female	ovary, uterus, anterior lobe of hypophysis female	thyroid gland, suprarenal gland, placenta female
sterility, male barrenness, male	testicle, anterior lobe of hypophysis male	thyroid gland, suprarenal gland, placenta male
stomach, weak... , dyspepsia	stomach, pancreas, small intestine, colon	thalamus, hypothalamus, anterior lobe of hypophysis
stroke, apoplectic fit, apoplexy	corpus striatum, cerebral hemisphere, artery	thalamus, hypothalamus, anterior lobe of hypophysis
struma,goitre	thyroid gland, parathyroid, anterior lobe of hypophysis	heart, kidney, suprarenal gland
tetania, tetany	parathyroid, thyroid gland	diencephalon, anterior lobe of hypophysis
thrombopenia, lack of thrombocythes	bone-marrow, liver, thymus, spleen	anterior lobe of hypophysis, placenta
urticaria, nettle, vash, hives	suprarenal cortex, thymus	parathyroid, ovary / testicle
vegetative disorder, autonomic instability, disturbance of the autonomic nervous system	thalamus, hypothalamus, midbrain, diencephalon, anterior lobe of hypophysis	the organs which are effected respective
vertebral, insufficiency, insufficiency of the spinal column	1) OSTEOCHONDRIN,vertebra connective tissue *) or 2) intervertebral disc, vertebra, cartilage, synovia, connective tissue *)	spinal cord, bone-marrow parathyroid, ovary/ testicle

*) mesenchyma

	Primarily disturbed organs	Secondarily disturbed organs
vitality, decrease in...	1) ovary/testicle, hypothalamus, hypophysis or 2) RN 13	placenta, suprarenal gland
weak stomach, dyspepsia	stomach, pancreas, small intestine, colon	thalamus, hypothalamus, anterior lobe of hypophysis

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List of Authors

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List of Available REGENERESEN in Alphabetical Order

adrenal medulla	medulla gland. suprarenalis
artery	arteria
blood	sanguis
bone-marrow	medulla ossium
brain stem	systema extrapyramidale
bronchi	bronchi
cartilage	cartilago
cerebellar cortex	cortex cerebelli
cerebellar medulla	medulla cerebelli
cerebellum	cerebellum
cerebral cortex	cortex cerebri
cerebral hemisphere	hemisphaeria cerebri
cerebral marrow	medulla cerebralis
chorioid	chorioidea
colon*	intestinum crass.*
conjunctiva	tunica conjunctiva
connective tissue (mesenchyma)	mesenchyma
corpus luteum	corpus luteum
cortex, cerebellar	cortex cerebelli
cortex, cerebral	cortex cerebri
cortex, suprarenal	cortex gland. suprarenalis
diencephalon	diencephalon
disc, intervertebral	discus intervertebralis
epiphysis	gland.pin.,corp. pineale
follicle, ovarian	ovarium folliculi
frontal lobe of the brain	lobus frontalis cerebri
gall bladder*	vesica fellea*
head of the pancreas	pancreas caput
heart	cor
hemisphere, cerebral	hemisphaeria cerebri
hypophysis female	glandula hypophysis fem.
hypophysis male	glandula hypophysis masc.
hypophysis, anterior lobe of female	gland. hypophysis pars. ant. fem.
hypophysis, anterior lobe of male	gland. hypophysis pars. ant. masc.
hypophysis, posterior lobe of female	gland. hypophysis pars. post.fem.
hypophysis, posterior lobe of male	gland. hypophysis pars. post.masc.
hypothalamus	hypothalamus
internal vessel coat	intima
intervertebral disc	discus intervertebralis
intestine, small*	intestinum tenue
kidney	rein
lens crystalline	lens crystallina
little brain	cerebellum
liver	hepar
lobe of the brain, frontal	lobus frontalis cerebri
lobe of the brain, occipital	lobus occipitalis cerebri
lobe of the brain, parietal	lobus parietalis cerebri

* = minimum content 70% mucous membrane

lobe of the brain, temporal	lobus temporalis cerebri
lobe of hypophysis, anterior female	gland. hypophysis pars. ant. fem.
lobe of hypophysis, anterior male	gland. hypophysis pars. ant. masc.
lobe of hypophysis, posterior female	gland. hypophysis pars. post. fem.
lobe of hypophysis, posterior male	gland. hypophysis pars. post. masc.
lung	pulmo
lymph node	nodi lymphatici
marrow, bone-	medulla ossium
marrow, cerebral	medulla cerebralis
medulla, adrenal	medulla gland. suprarenalis
medulla, cerebellar	medulla cerebelli
medulla oblongata	medulla oblongata
midbrain	mesencephalon
musculature	musculus
nasal mucous membrane	tunica mucosa nasi
occipital lobe of the brain	lobus occipitalis cerebri
optic nerve	nervus opticus
osteoblast	
ovarian follicle	ovarium folliculi
ovary	ovarium
pancreas	pancreas
pancreas, head of the	pancreas caput
parathyroid	glandula parathyreoidea
parietal lobe of the brain	lobus parietalis cerebri
placenta female	placenta fem.
placenta male	placenta masc.
prostate gland	prostata
retina	retina
skin	cutis
small intestine*	intestinum tenue*
spinal cord	medulla spinalis
spleen	lien
stomach*	ventriculus*
suprarenal gland	gland. suprarenalis
suprarenal cortex	cortex gland. suprarenalis
synovia	synovia
temporal lobe of the brain	lobus temporalis cerebri
testicle	testis
thalamus	thalamus
thymus	glandula thymi
thyroid	glandula thyreoidea
tissue, connective (mesenchyma)	mesenchyma
urinary bladder*	vesica urinaria*
uterus	uterus
vertebra	vertebra
vessel coat, internal	intima
yellow body, corpus luteum	corpus luteum

* = minimum content 70% mucous membrane

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