

# A Combination Injection Preparation as a Prophylactic for Flu and Common Colds

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## Summary

In a randomized, placebo-controlled double-blind trial, comparison was made between the effectiveness of the combination homeopathic preparation Engystol N, and the effectiveness of an isotonic saline solution, for prophylaxis of flu and common colds.

A total of 102 healthy male test persons 20 - 48 years of age were assigned either to the test group or to the control group. Twice weekly, these persons were intravenously administered 1.1 ml of the verum (Engystol N) or of the isotonic saline solution. In parallel with this administration, and beginning with the first injection, various blood-count parameters were established, as well as the antibody titers for Influenza A and for Influenza B. After completion of the injection phase, the test persons underwent an eight-week observation phase during which monitoring took place of the frequency, the progress, and the severity of any occurrence of flu or common cold.

The following findings resulted: Upon consideration of the entire eight-week observation period, no influence on the frequency of the occurrence of flu or common colds was determined. The average length of time, however, between the last injection until appearance of flu or a cold was 34 days for the Engystol N group, and only 19 days for the placebo group. The average length of the illness was 11 days for the Engystol N group and 16 days for

the placebo group. The severity of illness symptoms was less for the Engystol N group than for the placebo group with respect to 11 of 16 symptom characteristics (such as subjective responses, clinical symptoms, and severity of pain).

The increase in the antibody titer for Influenza A was — analogous to the duration and the severity of the illness — less in the Engystol N group than in the placebo group. Analysis of the blood-count parameters revealed no uniform picture for either of the two groups of test persons.

The administration of immunomodulators such as Engystol N can enable favorable effects to be achieved in the prophylaxis of uncomplicated virus disorders of the upper respiratory passages. Further studies will be required to optimize the procedures involving the application intervals and the term of administration of these preparations.

## Introduction

Discussion on the expediency of administering medicinal agents for prophylaxis of flu and common colds is still being carried out in a controversial vein. This study involved the testing of a combination homeopathic preparation which had been widely accepted in everyday medical practice as an allegedly successful prophylactic, but for which objective verification had heretofore been lacking for effectiveness in prophylaxis of flu and colds.

The purpose of this study — conducted in the context of an inter-individual, monocentric, and prospective double-blind investigation (i.e., Engystol N versus a placebo) — was to verify the prophylactic effectiveness of the homeopathic injection preparation Engystol N for flu and common colds.

## Materials and methods

A total of 102 clinically healthy male test persons took part in this study. In the process of recruiting the test persons, criteria for inclusion and exclusion were applied, and the test persons were informed as stipulated in the German Federal Drug Act (Arzneimittelgesetz). During November and December of 1988, each of the test persons received a series of six intravenous injections over a period of three weeks. An observation phase of approximately two months followed this injection phase. Laboratory tests were regularly conducted on all test persons during the injection and observation phases. Special attention was placed on the following laboratory parameters: the total leukocyte and lymphocyte count, the lymphocyte subpopulations, and the antibody titer for Influenza A and B.

The following initial hypothesis served as basis for the study: that there was no difference between the two groups with regard to the frequency

of flu and common colds. The chisquare test (4-field test) was applied as statistical method for this initial hypothesis.

The following criteria were required to be satisfied before a diagnosis of "flu or common cold" was established:

- Presence of least three of the following symptoms: overtiredness, loss of appetite, abnormal thirst, insomnia, a feeling of being chilly, excessive perspiration, runny nose, or coughing

and

- Presence of least two of the following symptoms: sore throat, earache, pain in the arms and legs, or headache

and

- Presence of least one of the following symptoms: nasal secretion, swelling in lymph nodes, eardrum retraction, or bronchitis

and

- Fever of over 37 C (axillary temperature)

and

- The employer (in this case, the German army) had to have granted exemption from duty outdoors.

Parallel to clinical diagnosis of flu or colds, blood tests were conducted to determine whether parameters associated with the immune system had undergone change.

### Findings

Of the 102 test persons participating in this study, a total of 21 became ill during the overall duration of the study. Eleven of these ill persons were in the verum (Engystol N) group and ten in the placebo group. One person in each group became ill during the injection phase. From these data, it may be inferred that the frequency of occurrence of flu or cold was not able to be influenced by prophylactic administration of Engystol N. These findings did not therefore refute the initial hypothesis stated above.

A more detailed examination of patient data and clinical findings, however, revealed a favorable effect of administration of Engystol N.

### Length of time between last injection and beginning of an illness

An interesting observation is the finding that the average length of time from the last injection until on-

set of flu or a cold was 34 days for the Engystol N group: definitely longer than for the placebo group, with 19 days (see Fig. 1).

### Severity of the illness

Severity of the illness was assessed

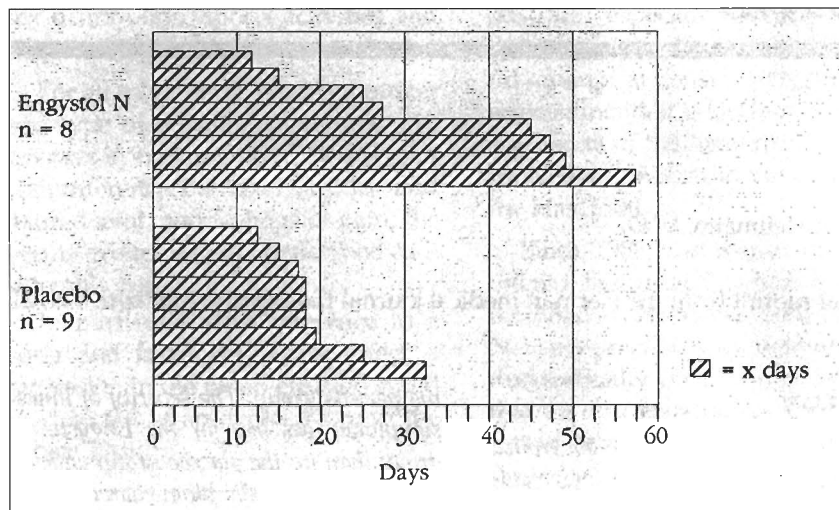


Figure 1: Length of time from the last injection until the onset of illness as flu or cold. Engystol N - 8 patients (average of 34 days), and placebo - 9 patients (average of 19 days).

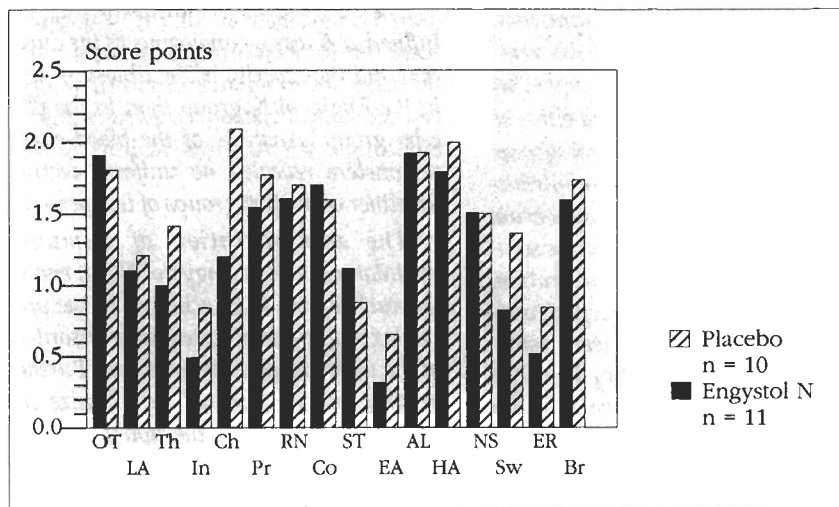


Figure 2: Average scores for values from patient responses and clinical findings. 0 - no symptom, 1 - minor symptom, and 2 - severe symptom. See Table 1 for explanation of the abbreviations.

#### Subjective patient responses:

1. Overtiredness (OT)
2. Lack of appetite (LA)
3. Thirst (Th)
4. Insomnia (In)
5. Feeling of being chilly (Ch)
6. Excessive perspiration (Pr)

#### Indications of pain:

1. Sore throat (ST)
2. Earache (EA)

3. Pain in arms and legs (AL)
4. Headache (HA)

#### Clinical findings:

1. Nasal secretion (NS)
2. Swelling in lymph nodes (Sw)
3. Eardrum retraction (ER)
4. Bronchitis (Br)
5. Runny nose (RN)
6. Coughing (Co)

Table 1: Overview of subjective patient responses from persons suffering from flu or colds, as well as clinical findings and indications of pain.

by means of 6 subjective patient responses, 6 clinical symptoms, and 4 indications of pain. A point rating scale of 0-2 was used for evaluation: 0 = no symptom, 1 = minor symptom, and 2 = severe symptom. The study revealed that, for 11 of the 16 characteristics of flu or common cold defined before the study, the point average for patients treated with Engystol N was lower than for those who had received the placebo.

Table 1 provides an overview of the responses provided by the patients and the clinical findings for the cases of illness. Fig. 2 depicts the average point values of the patient responses and the clinical findings.

The above data reveal that the Engystol N group registered a lower point average for 11 of the 16 illness characteristics than did the placebo group, a greater point average for 3 of the 16 characteristics, and the same point average for 2 of the 16 characteristics.

### Length of the illness

The lesser severity of the illness after prophylactic treatment with Engystol N is also evident upon consideration of the length of time the patients suffered from the illness. Length of illness was defined for this study as the time during which the test persons (soldiers) were exempted from duty outdoors. Results showed a length of 11 days for the Engystol N group, in contrast to 16 days for the placebo group (see Fig. 3).

### Initial titer and illness

In the Engystol N group, the period from the last injection to the onset of illness in the form of flu or common cold, is longer than in the placebo group. For both groups, the Influenza A antibody titer is abnormally high, especially for those test persons who became ill at an early point in time (see Figs. 4 and 5).

### Phenomena observed in the antibody titers

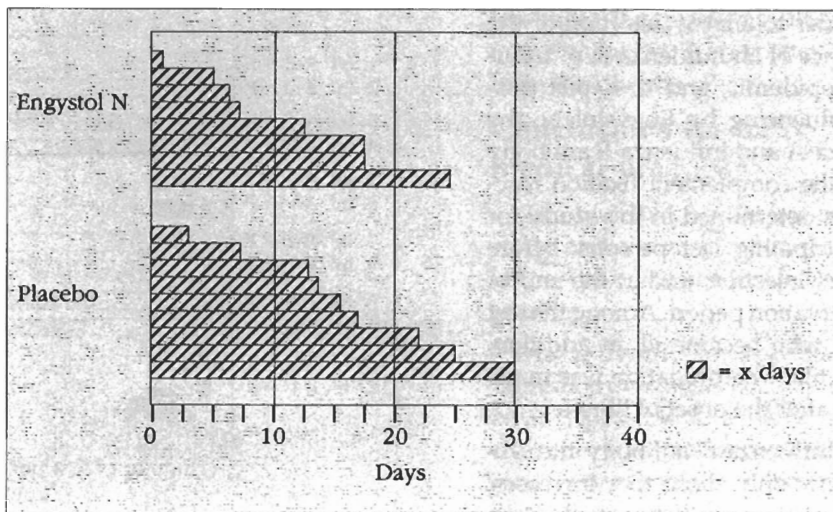


Figure 3: The period of time the test persons (soldiers) were exempted from duty outdoors during flu or colds. Engystol N = 8 patients, with an average sick time of 11 days; placebo = 9 patients, with an average sick time of 16 days.

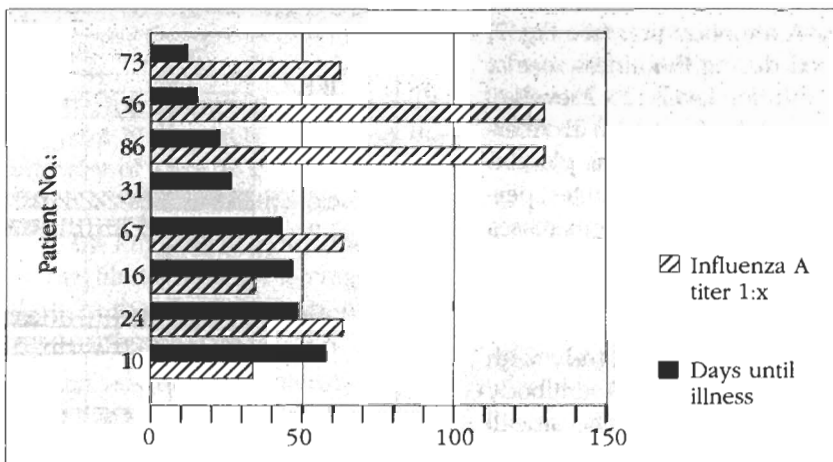


Figure 4: Length of time between the last injection and the onset of the illness in the form of flu or common cold (in days); the associated Influenza-A titer as 1:32, 1:64, and 1:128 for the Engystol N group.

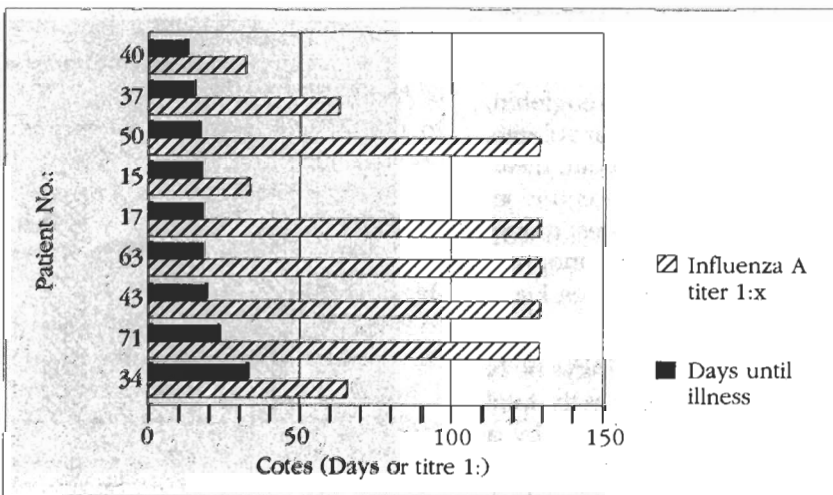


Figure 5: Length of time between the last injection and the onset of the illness in the form of flu or common cold (in days); the associated Influenza-A titer as 1:32, 1:64, and 1:128 for the placebo group.

In order to enable detection of the occurrence of an Influenza-A or Influenza-B epidemic, and to depict possible influencing by Engystol N, the Influenza-A and Influenza-B antibody titer in the complement fixation reaction was determined in this study for all participating test persons: before their first injection, and at the end of the observation period. Among the test persons who became ill, in addition, another titer determination was made 14 days after the onset of illness.

The Influenza-B antibody titer results show only slight titer increases, without difference between the two groups (see Fig. 6).

For 7 of the 11 test persons from the Engystol N group who became ill, the Influenza-A antibody titer (see Fig. 7) determined during the illness rose to at least two dilution levels (2 x 2 levels, 3 x 3 levels, and 2 x 4 levels) with reference to the initial tests. In the placebo group, it was found for all 10 test persons who became ill that titer increases of at least two dilution levels took place for Influenza-A antibodies (4 x 2, 2 x 3, and 4 x 4): see Fig. 7.

All participants in the study with an increase in Influenza-A antibody titer of 3 or 4 dilution levels became ill with symptoms part of the clinical picture of flu or common cold.

### Phenomena revealed in the blood count

No differences were revealed between the Engystol N group and the placebo group for the following parameters: erythrocytes, hemoglobin, hematocrit, mean corpuscular volume, mean corpuscular hemoglobin, mean corpuscular hemoglobin concentration, total leukocytes, lymphocytes, monocytes, total granulocytes, eosinophils, basophils, and neutrophils. See Fig. 8 for partial representation.

The results from the Engystol N group revealed an increase in the total leukocyte count, accompanied by a less-pronounced decrease in total lymphocytes, T lymphocytes, helper T cells, and suppressor T cells. Among the placebo group, on the other hand,

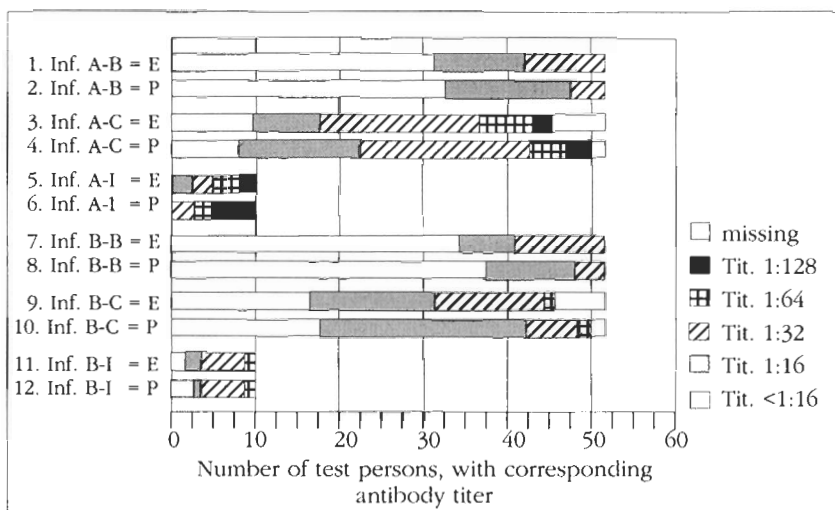


Figure 6: Antibody titer for Influenza A and B, for all test persons. The abbreviations to the left of the bar graph indicate titers taken at the following points in time: B = examination of test persons at beginning of study; C = examination at conclusion of study; I = examination for test persons who became ill; E = Engystol N group; P = placebo group.

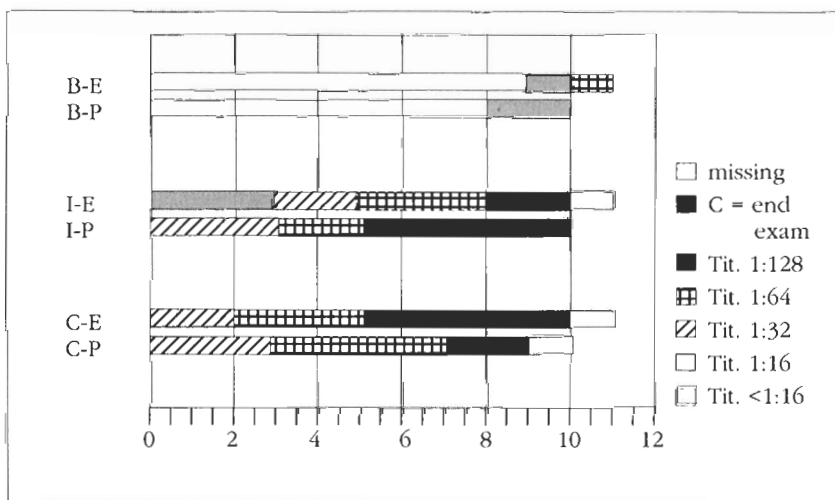


Figure 7: Antibody titer for Influenza A for test persons who became ill during the study. See the Figure 6 caption for the legend to the abbreviations at the left of the bar graph.

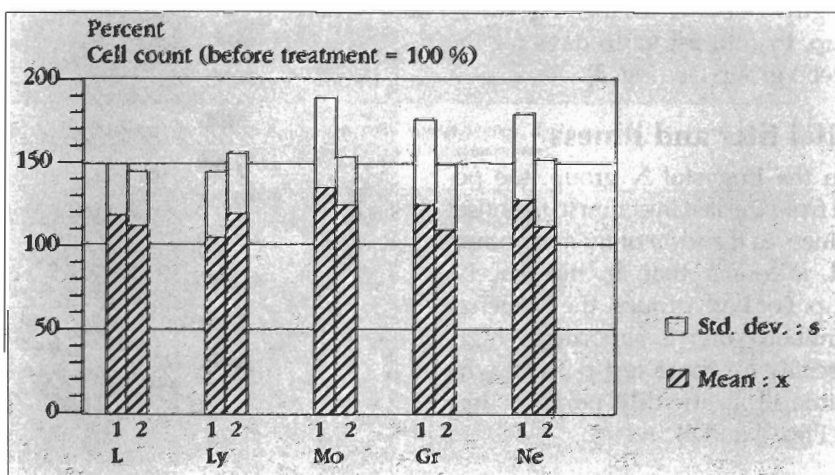


Figure 8: Mean values of the percent change in absolute cell counts. Abbreviations at the bottom of the bar graph: L = leukocytes; Ly = Lymphocytes; Mo = monocytes; Gr = granulocytes; Ne = neutrophils; 1 = Engystol N group; 2 = placebo group.

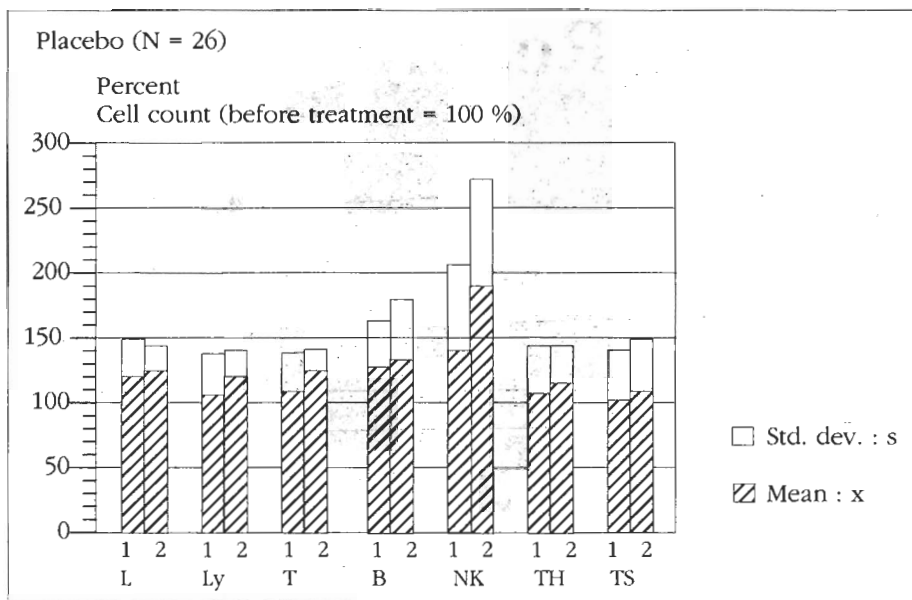


Figure 9: Mean values of the percent change of absolute cell counts per microliter. Abbreviations used for the types of cells and treatment: L = leukocytes; Ly = Lymphocytes; T = T cells; B = B cells; NK = natural killer cells; TH = helper T cells; TS = suppressor T cells; 1 = Engystol N group (n = 25); 2 = placebo group (n = 26).

an increase in the total leukocyte count was also accompanied by a rise in total lymphocytes, T lymphocytes, helper T cells, and suppressor T cells.

The increase in natural killer cells after treatment is more pronounced in the placebo group than in the Engystol N group. It appears extraordinarily difficult to interpret this result, since in the case of a virus disease such as flu or common cold, a stimulation of helper and natural killer cells is desirable for nonspecific and specific immunological resistance.

In both the Engystol N group and the placebo group, the B-lymphocytes decreased slightly after treatment. Fig. 9 shows these changes in the cell counts.

### Summary of study results

After monitoring the entire study period until the end of the eight-week observation phase, it became apparent that the administration of Engystol N group did not influence the frequency of occurrence of flu or common colds.

On the other hand, the length of time from the last injection until the outbreak of the next case of flu or common cold was an average of 34 days for the Engystol N group, in contrast to 19 days for the placebo group.

After occurrence of flu or a cold, Engystol N favorably influenced the intensity of 11 of 16 characteristics of the clinical picture of this illness.

In the Engystol N group, the length of the illness was an average of 11 days; in the placebo group, the average length was 16 days.

Analysis of the Influenza-A antibody titer revealed that the majority of the illnesses which developed was consistent with the attributes of an Influenza A infection. Administration of Engystol N enabled favorable influencing of the frequency and the symptom complex of illnesses resulting from Influenza A. Correlation between the severity of the symptom complex and the antibody level was established in this context. The administration of Engystol N resulted in an alleviation of not only the symptom complex, but also in reduction in production of antibodies.

It was not possible to evidence effects brought about on constituents of the lymphocyte subpopulations: e.g., in the form of stimulation of helper T cells and natural killer cells. Application of Engystol N therefore resulted in effects only in the humoral and not in the cellular phases of immunodefense. It was possible to dif-

ferentiate this humoral effectiveness, in treatment for flu and common colds, from the placebo effect.

### Conclusions for daily medical practice

The conclusions drawn from this study and summarized in the following are of relevance for daily medical practice.

As a result of application of immunomodulators such as Engystol N, it is possible to achieve favorable effects in the treatment of uncomplicated virus illnesses of the upper respiratory tract which are unresponsive to specific therapeutic measures.

Even if the cells of the immune system (e.g., the lymphocyte subpopulations), remain unaffected, the severity of symptoms is alleviated, and the duration of the illness is shortened — without the risk of side effects.

This study, however, has not contributed toward establishing the optimal dose and term of administration of this preparation. It appears, however, that a relatively low dose (e.g., one injection per week) over a correspondingly longer period of time would be better suited for prophylactic immunostimulation than the dose and length of administration applied in this study. Under such conditions, Engystol N can therefore also represent an alternative prophylactic inoculation for illnesses associated with influenza viruses — especially for nonendangered groups of the population. Further confirmation is required in ongoing studies with this preparation.

Dissertation source: Heilmann, Anton. Ein injizierbares Komplexpräparat (Engystol N) als Prophylaktikum des grippalen Infekts — Doppelblindstudie im Vergleich zu phys. Kochsalzlösung. Diss. Med. Univ. Würzburg, Germany, 1991.

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