

CLINICAL INVESTIGATIONS ESPECIALLY ON THE EFFICIENCY OF THE BODY UNDER THE INFLUENCE OF GINSENG

Volkmar Böhlau and Eva Böhlau

*Johan Wolfgang Goethe Universität
Frankfurt, W/GERMANY*

While working with Max Bürger, Leipzig and Böhlau has developed a completely automatic, immediately registering instrument to determine functional capacity of man. It registers the oxygen consumption of the body at rest, at variable loads, and during recovery. With the help of a computer, recovery quotient can be determined, and oxygen-pulse, respiratory equivalent, and efficiency, which are immediately visible. More than 70,000 healthy, sick or re-convalescent persons were examined with this method. The results show a statistically significant dependence on age and sex. Moreover, it enables objective judgement of effectiveness of geriatric drugs.

It is sure that the processes of aging can't be influenced by one method or drug alone, and that it is important to diagnose and cure the different diseases of advanced age. Combined therapeutic actions are necessary, including drugs, balneological arrangements, dietetics, psychotherapeutics etc.

But it is equally sure that the effectiveness of the drugs must be examined in particular. Therefore we now try to show the effectiveness of ginseng not only with clinical investigations of it on the efficiency of the body with our Polyenergostest but also with psychotechnical tests.

The discipline gerontology and geriatrics which is now becoming more and more important

has been found and worked on in Germany above all by Professor Max Bürger, and the main results of his school were published in his well-known book under the title "Altern und Krankheit" (Aging and illness).

Having been his pupil I have especially studied the problems of the reduction of physical performance in people of old age and thus I found out that there is a great and essential difference between calendar and biological age. In many subjects aged between 50 and 65 years we established a relatively progressed high biological age and for this reason we have given our attention to the field—up-to-date neglected—of the so-called premature aging (within the framework of the preclinical geriatrics).

Since about 30 years the German Social Insurance has been setting up great rehabilitation centers. In our so-called "Taunus-Sanatorium" in Bad Soden in the vicinity of Frankfurt on the Main we have treated in the last 20 years more than 40,000 mostly preaged patients suffering generally from the most frequent geriatric disorder, namely chronic bronchitis, during a full treatment of 4 to 6 weeks. In order to verify which is the severity of the generally existing physical and psychical adaptation insufficiency we perform an all-round exploration and above all a functional diagnosis. Among others pulmonary function tests

of the external respiration and whole-body plethysmographs are conducted.

We give special attention to measuring the oxygen consumption under physical effort. I have employed a specific paramagnetic technique for the measurement of the oxygen consumption and performed thousands of performance tests by means of the device developed by me, the so-called "ENERGOTEST". The chronic oxygen deficiency, hypoxia, plays an important part in aging and therefore this parameter can be successfully used for the geriatric diagnosis and for the assessment of gerontotherapeutic measures.

The picture shows clearly the difference in the shape of the curve in young efficient subjects and older ones with impaired performance. It also illustrates the age course of the physical capability of males and females and one can clearly recognize that fitness is improved in persons engaged in sport and it is worsened for instance in case of cardiopathy. It is a substantiated fact that physical capability decreases with increasing age but we know too, that there is also a great individual variability. According to our experience in many cases it is possible to achieve marked improvements by a concerted therapeutic intervention.

Within our rehabilitation program the first step is to combat existing diseases by modern therapeutic measures. A large-scale German study on almost 5,000 apparently healthy volunteers showed that in about 80 % of the subjects aged between 50 and 60 years pathological changes were present which by all means had to be treated therapeutically. Further items in our program of concerted geronto-therapeutic action are *health education* as preparation for the advanced age, psychotherapy, for instance by autogenic training and, if necessary, prescription of psychotropic drugs, especially in cases of depressive phenomena. Of paramount importance is also physiotherapy actively by sport and kinotherapy, and passively by the manifold possibilities of physical medicine. I want to mention as example the treatment by inhalation of medicamentous aerosols which is very important specifically for prophylaxis and therapy of bronchial diseases.

A further significant step in the plan of treatment is the administration of drugs for heart and circulation since often an insufficiency of these organs accounts for decreased performance. Thus probative digitalization in cases of incipient cardiac insufficiency has proved a success.

Besides a sociotherapy it is necessary also for the time after the sanatorium treatment to safeguard follow-up control by a physician. Precisely nowadays an alimentation which does justice to the age plays an important part, knowing that adipositas in aged persons constitutes one of the decisive risk factors. We could evidence by our studies that a diet poor in calories and rich in albumin can eliminate an existing decrease in vitality.

On the basis of our many years' experience the so-called *mood disorders* in preaged subjects play an important part. These symptoms, such as insomnia, fatigue, depressive mood, lack of drive, weak memory, and vegetative disorders, which frequently do not yet constitute signs of a disease but are sequelae of the weakening of vitality and vigilance in the advanced age, should be treated symptomatically. We have been in the position to prove improvements in the course of the treatment by means of psychotechnical methods, such as the Vienna determination device, the Pursoit rotor and measurements of the reaction time.

Since apart from our sanatorium with 250 beds, we do not know any other institution in Germany to which so many preaged patients before the 65th year of age have access, we consider it an important task to test objectively therapeutic procedures of the medicamentous and physiotherapy. Thus it was interesting for us to start a large-scale trial with your drug for the treatment of mood disorders in old age. The patients were handed a questionnaire before the beginning of the trial containing questions on decrease in vitality, fatigue, exhaustion, insomnia, depressions, vegetative symptoms etc., which they had to fill in within 5 minutes by marking the symptoms according to their intensity with a cross. The patients were asked to fill in the same questionnaire in the middle of the treatment and

at the end of the same. The first results showed a clear improvement of the emotional conditions after this therapy.

But also the physical capability could be improved in part of the cases, as is illustrated by this example. The body plethysmography as sign of the improvement of lung function showed a favourable development as is seen from this case. It goes without saying that the results obtained by the Bursoit rotor and in some cases the measurements of reaction were favourable.

We do not feel in no way soever that such drugs may be used successfully in the sense of a rejuvenation or a reduction of geriatric diseases, because aging is a one-way street and there is no way back. But in many cases we may certainly act in the sense of the saying of gerontologists: "Do not only add years to the life, but also life to the years" by relieving the complaints of old age.

Summarizing I can say that already the physiological aging, the "physiosclerosis" is a poly-

causal process and manifold causes account for diseases in advanced age. For this reason in pre-aged subjects there is hardly any specific monotherapy sufficient for a success, but because of the polycasuality and polypathy a specific polypharmaceutic intervention in the sense of a concerted gerontotherapeutic action must be conducted.

Thus we have been able in the course of many years to obtain a good and very good therapeutic success in about 70% of our patients, postponing in this way an early retirement of the subjects. In the follow-up studies the fact of high economical importance was established that in the first and second year following the rehabilitation measures, the number of non-productive days due to illness per year could be decreased by 60%. Thus the government has saved many millions of money. We see that our rehabilitation of pre-aged is not only an ethical mission, especially also for the physician in the practice, but is of great economical advantage.