

July 8, 1966

Dr. Sven Punsar
Institute of Occupational Health
Haartmaninkatu 1
Helsinki, Finland

Dear Sven:

Thank you for your letter dated July 4th. We shall do what we can to straighten out the identifications for cholesterol values. Joe Anderson hopes to talk with you about this when he goes to Finland after the Congress in Hamburg.

It is good to learn that the printer in Tampere promises to have the Acta job done soon. If we get final printed copies in August we shall forget about previous exasperations.

Henry Blackburn is writing to you about the mortality data. All we know is that the table sent you covers all of the deaths we know about. So if there are actually 52 deaths in West Finland and 61 in East Finland, the picture will be grossly changed. The ratio of observed to expected deaths will then be 1.00 for West and 1.34 for East Finland, instead of 0.50 and 0.77 as in the table. Obviously, it is of the greatest importance to straighten out this question as quickly as possible. We await further advice because I, in turn, must advise U.S.P.H.S. and the other cooperating groups.

Shall we see you at New Delhi? Regards in any case,

Sincerely,

Ancel Keys, Director

AK:cj

CC: Dr. M. J. Karvonen
Dr. H. Blackburn ✓

July 11, 1966

Dr. Sven Punsar
Institute of Occupational Health
Haartmaninkatu 1
Helsinki, FINLAND

Dear Sven:

Thanks for your recent letters, pulse wave data, and information on non-respondents. The enclosed list represents all men with completed forms 10 on Finnish deaths available here. The totals are less than those you wrote to Dr. Keys about, and so we would be grateful for the forms 10 on cause and date of death of the others at your earliest convenience.

With regard to the coding of clinical events, I have expressed my feeling that the earlier outline by which Esko laboriously coded the clinical events, was a bit impractical. However, use the data already assembled as you see fit.

I am enclosing a form in which various degrees of CHD are assembled for prevalence and for definition of cohorts, the definitions are also given, as well as they can be. We are, of course, interested in the "soft" data on angina and heart failure though we know little about the degree of confidence we can have in comparing areas for these items.

We hope you can do a chart review of cases labelled definite and possible heart disease by the examiners, and assign them to the CHD categories listed here. When we receive those subject numbers we can duplicate your work from our microfilm here to see how well we agree.

Please keep in touch.

Regards,

Henry Blackburn, M.D.

HB:neb

P.S. Good fishing. I've retired from fishing and jazz, hopefully not permanently.

cc: Dr. Keys

August 12, 1966

Dr. Ivan Mohacek
Interna Klinika, Rebro
Zagreb, YUGOSLAVIA

Dear Ivan:

Enclosed is a belated use of some of the ECG data you so painstakingly acquired. I hope you approve. It was submitted to Circulation.

We are sorry to miss you in Corfu. The U.S. Budget Bureau has deferred U.S. funds for overseas use, even though the grants are approved. Dr. Keys is arranging the Corfu follow-up on a severely restricted budget.

I hope to see you next year when I will come to Velika Krsna.

Have you written up or published any of the Yugoslavian clinical or other data? Is there anything we can do here to help in analysis of material you would like to study?

We are now editing and punching on cards the 1963 data. My only question is: when another doctor besides yourself has checked "possible angina" in the history section, and you have added your comment on the last page with your clinical code of 59.3 or 59.6, does this mean you have seen the case and consider it definite angina or should it only be classed "possible"?

Best regards,

Henry Blackburn, M.D.

HB:neb
Enclosure
cc: Dr. Keys

October 14, 1966

Dr. Ivan Mohacek
Interna Klinika, Rebro
Zagreb, Yugoslavia

Dear Ivan:

Thanks for your letter forwarded here and there. You should receive within a month the full Acta monograph giving the material you desired, but for 1958. None of the inter-relations have been studied for 1963 though you were sent on September 1, 1965 the simple tabulations of history, physical and ECG codes. You will soon receive the tabulated distributions of cholesterol, blood pressure, and build measurements, but no inter-relations.

I fear we cannot get these immediately but your data will be the first up when we tackle this the first of the year.

I have slides of our time in Crete and will bring them when I visit you next year.

Regards to your family,

Henry Blackburn, M. D.

HB/ljs
cc: Dr. Keys
W. Parlin
cc

DR. ALESSANDRO MENOTTI

ROMA

Rome november 3rd, 1966
Via Pandosia 22

Dr Henry Blackburn
Laboratory of Physiological Hygiene
University of Minnesota
Stadium Gate 27
Minneapolis Minn.

Dear Dr Blackburn, first of all keep my best wishes for the health of your daughter; I knew from Dr Keys of the accident and I hope that everything is going right.

Here enclosed you will find a tabulation of ECG data as coded by myself in Corfou. They are only crude ones, and naturally comprehensive of all ages. New criteria, first applied in this survey, can explain the high prevalence of code 5.2. The second part of the table may give a better idea concerning individuals instead of over-all prevalence of single items. Dr Keys has already seen this table and I pray you to prepare a photocopy for him.

Now I would like to explain you the reason of the equivocal situation concerning the tape-recorder equipment.

According your letter of July, I charged Imbimbo to sent the equipment to Frankfurt. In september at Corfou, you and I agreed that, after the period in Germany, the equipment should have come back to Rome.

After my coming back from Corfou I knew that Imbimbo had sent only the broken section of the equipment, while the other part had remained in Naples. I believed that this was due to specific instructions from yourself or from anybody else, so that I asked Imbimbo to ~~send~~ send in Rome the part not forwarded to Frankfurt, considering that the whole machine had to come in Rome.

Only few days ago I received from Imbimbo the documents of the custom and together with them I discovered your telegram of october according which also the actual tape-recorder was apparently expected in Frankfurt.

Now what must I do? The tape recorder is now in Rome, but keep in mind that (a) the dead-line for the reimport of the section from Frankfurt will be on february 10th; (b) the machine should be forwarded to Dr Vittorio Puddu Centre for Cardiovascular Diseases, Ospedale S. Camillo, Roma; and (c) the machine must be accompanied by a certificate from the TMC stating that the repair has been performed "free of charge".

Best regards. Sincerly yours

Alessandro Menotti
A. Menotti

* 1967

DR. ALESSANDRO MENOTTI

ROMA

Rome sept.28 1966

Via Pandosia 22

Dr Henry Blackburn
Lab. Physiol. Hygiene
Univ. of Minnesota
Minneapolis Minn. USA

Dear Dr Blackburn,

I regret for having not seen you before your departure from Corfou, but that evening we came back a little later than usually. I thank you very much for your courtesy and for your active interest to my work.

For what are concerned the future plans, I am glad to cooperate again in the next years in the several areas and to be involved in the use of new devices as the magnetic tape and others of which Dr Keys told me during his stay in Corfou. Under this point of view I will inform you of what happened to the tape recording machine probably sent to Frankfurt.

The Corfou follow-up was finished on tuesday 21 after having completed the examination of 565 men, that is about the 92-93% of the whole group and about the same percentage of the group aged 45-64.

The ECG record have been numbered, put in envelopes and given to George Arnaoutakis to be mailed to Minneapolis. As written on the first envelope, the circled number is the serial number of 1961.

Beginning from n°375 of the 1966 serie, you will find many tracing technically very poor and a certain number with evident use of the filter. This was due to the terrible situation of the working place in Scriperon (the second village) where the current supply was not reliable. The voltage ranged 170 to 190 with frequent wavings. For some patients I used the Cardipan instead of the Elema, thinking to something wrong in the first machine, but the effect was practically the same, with troubles in the same leads. And in spite of my insisting requests I could not obtain a transformer able to work from 180 to 220-240 or better a stabilizer.

Included here I am sending you my coding of all tracings. I found some difficulties in using the new coding rules concerning the new relationships of ST to T coding. These may be reflected in what you can find in my list. Moreover I would like to express my opinion on the necessity to exclude ~~under~~ the coding of items 2,3,4,5 also in presence of uncomplete RBBB. This might avoid some possible misunderstandings.

I will be grateful to you for receiving the definitive coding of the Crete follow-up ECGs (possibly with a reference to the coding done by Mohacek and myself) and, when ready, also that of the Corfou research.

Best regards to you and Mrs Blackburn.

Sincerely yours

Alessandro Menotti
Alessandro Menotti

Incl. 11 sheets

REPUBLIČKI ZAVOD ZA ZAŠTITU ZDRAVLJA SR HRVATSKE

Rockefellerova 7, Zagreb - Yugoslavia

Institute of Public Health of Croatia

Institut de Santé Publique de Croatie

RB/L/US

April 18, 1967

Dr. Henry mfb.

Dr Henry Blackburn
Laboratory of Physiological Hygiene
University of Minnesota
Stadium Gate 27
Minneapolis, Minn.55455

Dear Henry:

Thank you so much for the records which I received the other day. I enjoyed both very much and so did my friends at a recent party in my home. The revival of Bach in a swinging rhythm is becoming great fashion, as you already know.

Otherwise, no special news. I have started to work on the clinical data from 1958 (!) which Ivan is using for his doctor's thesis but we shall also have them published in a foreign journal.

In the field we are regularly checking the deaths of our subjects in Slavonia and Dalmatia and shall not do much other work before next year when the 10-year resurvey will take place. We are planning the field work for the second part of September and early October in Dalmatia and afterwards in Slavonia. I hope this will suit you. It would be nice to have also an international gathering in Makarska again. This time the travel arrangements could be much improved since Split has become an international airport.

How are things going on in Minneapolis? Should appreciate having a word from you.

With kindest regards,

Sincerely,



Ratko Buzina

June 26, 1967

Dr. Pentti Rautaharju
Department of Physiology
Dalhousie University
Halifax, Nova Scotia, CANADA

Dear Pentti:

If you can instrument your proposal in time, I agree to go ahead with it. However, I am getting Ancel's advice before we finalize the plan.

I definitely see the advantage of simultaneous Frank and conventional leads in the same individual but list below some negative considerations which we should make.

- 1) Transport of another major valuable piece of machinery, not covered under the budget here for this. Problem of a 50 cps motor for it? 
- 2) Primitive work conditions of Velika Krsna and as of now, questionable power supply. 
- 3) Relative absence of abnormal ECG findings in Velika Krsna (e.g. 5 infarct Q waves, 1 ischemic post-exercise ECG). 
- 4) Your suggestion of one ECG station only commits us to recording only the routine step test rather than a graded exercise test. It's relatively easy to add a new station, but impossible to add another ECG routine at the same ECG station which would double the time required there. 
- 5) How realistic is the likelihood of getting Caceres' diagnostic program going at Dalhousie on the conventional leads, and making the comparison you speak of. 
- 6) The questionable receptivity of Medtronic to doing the belt for us (small profit, etc.). Please call Norm Hagfors at Medtronic and give him instructions. He can omit the McFee terminals. 

Dr. Pentti Rautaharju
Dalhousie University
Halifax, Nova Scotia, CANADA

June 26, 1967
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Instead of providing at one station the conventional 12-lead records on paper, under the conventional rest and step-test protocol, I suggest rather that we establish a separate station for a bicycle test to a given heart rate and record a protocol of rest and exercise as we wish.

The question of another station for pulse waves will have to be discussed with Ancel. We will need another M. D. or technician there, and he might want to enlist Gyarfás from Budapest, or Dontas.

I will call you on this in the next few days. I am delighted with the progress we are making.

Regards,

Henry Blackburn, M. D.

HB/rk

c.c. Dr. Keys

July 19, 1967

Professor B. S. Djordjevic
Clinique Medicale B
Medical Faculty
Deligradska 37
Belgrade, YUGOSLAVIA

Dear Professor Djordjevic:

Thank you for your good letter and it appears that Dr. Rautaharju and I will take advantage of the opportunity to make these recordings. Since you will be operating at the rate of about 6 cases per hour, we will probably arrange our tests to involve 3 an hour. We are meeting in two weeks to consider details.

If we get pulse wave and/or exercise data we should probably record those with vascular disease on clinical exam. and a sample of every fourth man otherwise.

I wonder if we might contract now for the two technicians and if you would let us know the pay scale so that we might prepare a University agreement. Might we also invite young Peter Mitrevski from Skopje to work with us those two weeks. He is interested to come to the Lab. here for a year.

It might help our entry through your customs if we had an official letter indicating our invitation to come and bring the medical instruments necessary for tape recording of physiological data with the Belgrade field group in Velika Krsna.

Regards,

Henry Blackburn, M.D.

HB/rk

c.c. Dr. Keys

N.
Pending since
July 19. Must
act. Believe we
should prepare
agreements today
HS

August 21, 1967

Professor B.S. Djordjevic
Proleterski Brigada 92
Belgrade, Yugoslavia

Dear Professor Djordjevic:

Herman Wolf, engineer, will arrive from Munich by Turkish Airlines 932 August 29 at 1615 for work in Velika Krsna.

At his station he will be able to tape record resting ECG's and pulse waves followed by a short term progressive work load to a fixed heart rate endpoint of 140 beats/min.

He and Dr. Mitrevski should be given instructions by Nedelkovic concerning stopping the test with the appearance on the oscilloscope of indications you decide limiting. We stop exercise prior to 140 heart rate if we have a run of 3 or more consecutive premature ventricular beats, 2 mm. or more ischemic S-T depression, chest pain or other complaint of the subject.

He would record on a systematic sample of one out of three or one out of four from all subjects, depending on the schedule he establishes to maintain an even flow to your satisfaction. You would exclude those with frank cardiac disease on history and physical examination.

I would suggest that the test be a progressive one, so that the older or more disabled subject would not be over-stressed at the outset and to provide warm-up. We would like to have a short instruction session pedaling against no resistance, and optimal adjustment of the height of the bicycle seat (so that the knee is slightly bent at the lower point of the excursion). This would be followed by a two-minute warm up at 300 kpm/min. (about 50 watts), two minutes at 600 kpm/min. (about 100 watts), and two minutes at 900 kpm/min. (about 150 watts). We would expect virtually all to have reached the endpoint, determined on a cardiometer, by this time. A few well-trained subjects might require 1050 kpm or 1200 kpm/min.

I assume Nedelkovic can set up safety procedures, and if any problem arises readjust this program according to your best judgment such as lowering the heart rate endpoint to 130 beats/min. The men should rest on the bike three minutes for the recovery record taken immediately and at three minutes, preferably with the feet on the rest bars or handle bars.

Professor B.S. Djordjevic
August 21, 1967

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This test should not replace the routine single-step three minute test which should precede the bicycle test, both to conserve comparability with the study 5 years ago, and to identify subjects who should be given special attention.

Of course, feel free to modify or eliminate the bike test if it appears unacceptable to you or the subjects.

My present schedule calls for my Belgrade arrival by JU405 at 625 PM on Saturday, September 9, I hope in company with Tom Strasser. I would like to spend a couple of days with you and Dr. Keys at Velika Krsna, and a couple of days working over data with Strasser. I must return to New York for a meeting on September 15. Would you be good enough to make hotel reservations for me in Belgrade?

Your spare Elema galvanometers will arrive with Herman Wolf. Perhaps Dr. Buzina's Elema could be made available to you as a spare.

Best regards,

Henry Blackburn, M.D.

HB:mh

cc: Dr. Keys
Dr. Taylor
Dr. Rautaharja
Dr. Strasser
Herman Wolf - Special Delivery

October 3, 1967

Prof. F. S. P. van Buchem
Duijroosplantsoen 15
Haarlem
NETHERLANDS

Dear Prof. van Buchem:

Thank you for your letter of September 27. I'm impressed in my daily work and in my travels how important, and how difficult, is true communication and understanding between persons.

On the other hand, Dr. Keys and I are both noted for speaking our minds in evaluating data. In this country we have a very free and critical exchange with colleagues. This intellectual exchange and critique is completely separate from personal regard, affection or cooperation, and in no way suggests a lack of personal regard.

I have only a remark on those risk data you showed me in Noordwyk and at Minnelea. You might be a little more secure in the cholesterol-risk results if you also analyzed the data for each decade according to criteria based on relative standing in the distribution for each decade, rather than only on absolute values of cholesterol. We spoke of this in Noordwyk. It is useful to do the analyses both ways, by a man's rank in his group and by absolute cut-off values, preferably also determined from the distribution in his own age group.

In regard to your slide of the complex intercorrelations, I simply don't understand it, except that small levels of statistically significant correlations do not necessarily always mean biologically significant relationships. On the other hand I'm delighted if Prof. Tremoliere finds the relationships of interest. I am enclosing a summary of recent energy balance studies by Dr. Grande of this laboratory which may interest you.

Dr. A. Menotti is systematically reviewing all incidence data by the criteria we drew up in Minnelea. Would you be good enough to

Prof. F. S. P. van Buchem
Haarlem, NETHERLANDS

October 3, 1967
Page 2

provide him with narrative forms 10, at least for those with cardio-vascular deaths and deaths of unclear cause, on the Zutphen deaths through the 5-year follow-up. I hope we can have those to him by November 1.

I will be writing you and your wife again shortly, concerning my most pleasant stay in Noordwyk.

Cordially,

Henry Blackburn, M.D.

HB/rk