

October 19, 1964

Dr. Srecko Nedeljkovic
Dr. Allan Barry, et. al.
c/o Dr. Martti Karvonen
Institute of Occupational Health
Haartmaninkatu 1
Helsinki, Finland

Dear Doctor Nedeljkovic:

I just had returned to me unopened a long letter of details I had written you in Belgrade. Nevermind. You seem to be well settled.

Since you are now actively coding ECGs I would appreciate again a letter listing your ideas about points of weakness and ambiguity in the system. I will make one last attempt to strengthen it before giving up. Best regards.

Note to Dr. Barry: Hope the second load of 1/4 inch tape arrived. We can't locate the first shipment sent 1 month ago. Our first order of business will be to use the discriminant function analysis on the CM₅ lead, and for this we will need the definite clinical heart cases clearly labelled. Any completed tapes East or West should be sent along to us now by air freight, collect if they will do so. I will keep you and Orma appraised of the status of this study. The eventual comparison with XYZ leads will, of course, involve your active participation in preparing and authoring a manuscript. Astrand gave me one of the pulse rate conversion stop watches. You can always get one through him, as his Stockholm watchmaker simply mounts the photographed face on a standard stop watch.

Note to Dr. Kallio: In order to prepare a suggested outline for the little study on the questionnaires I mentioned to you I need the total number of men examined through Sept. 9 in Ilomantsi. Could you send this to me after mentioning it to Esko?

Best regards to all,

Henry Blackburn, M. D.

HB/cjh

TYÖTERVEYSLAITOS

INSTITUTE OF OCCUPATIONAL HEALTH - L'INSTITUT DE MÉDECINE DU TRAVAIL - INSTITUT FÜR ARBEITSMEDIZIN

HAARTMANINKATU 1 — HELSINKI — FINLAND
DIR.PROF. LEO NORO, M.D.

October 26, 1964

Dr. Henry Blackburn
Laboratory of Physiological Hygiene
University of Minneapolis
Stadium, Gate 27
Minneapolis 14, Minn.
USA

Dear Henry,

Three more days to go in the west. The participation rate has been at least as high as in the east, and the team spirit has shown no sign of fatigue. All the catastrophes have been avoided, some with a margin of a few hours only.

Yesterday, the parcel of September 15 ultimately arrived, as registered surface mail. We shall negotiate with Pentti, how best to use the extra tape we have at our disposal, before returning it to you. An idea would be to put on tape some pulsewaves. A suitable series might be obtained from our mental hospital 5-year dietary experiment, for instance.

With best regards,

Sincerely yours,

Martti J. Karvonen

Martti J. Karvonen

Amel: Have requested return shipment of all equipment except 50 cps tape deck itself.

JW3

ISTITUTO DI FISIOLOGIA UMANA DELLA UNIVERSITÀ

«FILIPPO BOTTAZZI»

NAPOLI

S. ANDREA DELLE DAME, 3
October 29, 1964

Dr. Henry Blackburn
Lab. Physiological Hygiene
Stadium Gate, 27
Minneapolis, Minn. 55455
U.S.A.

Dear Henry:

In your Memo of July 13, you sent us some advices about one-hour oral glucose tolerance test.

I like have as soon as possible the following material and informations:

1) The PHS Publication N° 1000 Series 2 No 3 U.S. Gov. Printing Office

2) With a 50 g. 1hour glucose tolerance test at which blood glucose value subjects can be considered positively diabetic and at which interval the borderline diabetics. (Using the true glucose method of Somogy).

I went trough the literature (cheafly English: a) Stewart W.K., Lancet 2:184, 1963; b) Sharp L.L., Proc. Royal Soc. Med. 57:193, 1964; c) Walker J.B., Lancet 2:246, 1964) and I am convinced that above 150 mg.% ml of blood with this test, subjects can be considered diabetic. The borderline interval is 110-149 mg% ml. But I do not have supporting references.

I need that from you, but in very very short time.

Il maestro has announced your needs for our survey next year. I am ready!

Saluti a Nellie e figli

cordialmente

Flaminio

(Prof. Flaminio Fidanza)

November 3, 1964

Dr. Martti Karvonen
Institute of Occupational Health
Haartmaninkatu 1
Helsinki, FINLAND

Dear Martti:

Thanks for your note and the news of the effective completion of both areas! Now, clearly if we make progress in analysis of the material we can go on. If not it will be serious. I assume you got the cable from Pentti and me from N. Y. C. last week. We must have all tapes by air freight promptly.

In order to make classifications we must have at the earliest possible moment, microfilms of the clinical history and physical. The situation is such here that we can and must punch these clinical data in the next two or three months! Tabulations can be returned to you within 6 or 8 weeks of receipt of the microfilm material. This includes '59 and '64 data.

I assume you will also photocopy or microfilm the material on the deaths.

The unused tape you may hold there. It represents \$400 worth. You are welcome to set up your own amplifiers and record with the Mnemotron tape deck, under the guidance of the young engineer who worked with Pentti. We must have all other apparatus returned to us immediately air freight, including 5 Argonaut amplifiers, control box, telemetry, oscilloscope, etc.

Pentti arrives in a few days and we must get to work.

Regards to all,

Henry Blackburn, M.D.

HB/cjh

TYÖTERVEYSLAITOS

INSTITUTE OF OCCUPATIONAL HEALTH - L'INSTITUT DE MÉDECINE DU TRAVAIL - INSTITUT FÜR ARBEITSMEDIZIN

HAARTMANINKATU 1 — HELSINKI — FINLAND

DIR. PROF. LEO NORO, M.D.

November 5, 1964

Dr. Henry Blackburn
Laboratory of Physiological Hygiene
University of Minnesota
Stadium, Gate 27
Minneapolis 14, Minn.
USA

Dear Henry,

Thanks for your correspondence, for the cables, and - above all - for the tapes, magnetic or otherwise, which all came in time, once with the margin of 10 minutes only. This added considerably to the excitement of the field study.

I gather from your telegrams that you are now in an equal urgency to get back all the stuff in Minneapolis. Considering that this is my third day in Helsinki, I feel that we have already achieved something. All the tapes are packed and are being cleared through the customs now. The medical records from Ilomantsi have been photographed and will be sent to you together with the tapes. The 1959 medical records have also been photographed, and will be sent to you within a few days. The 1964 records of the west are being arranged, and a photographic copy will soon be in your hands.

As to the equipment, I understood that Pentti had agreed to carry on a cooperative study with Robin Herron, with the definite aim of being able to tape pulse waves in Italy next spring and to analyse them with Pentti's sophisticated methods. As you will appreciate, it will be essentially easier to do this, if we have the necessary equipment at our disposal. Robin Herron gave to me the following list:

Mnemotron Modulator-Demodulator

-"- Tape Recorder

Power Supply

Microvolt Calibrator

Oscilloscope with "Differential Amplifier" and "A Trace" plug-ins.

2 Argonaut Differential Preamplifiers.

All other equipment we are now collecting and packing for sending to you.

Of course, we shall be delighted to cooperate with Pentti even without equipment. One possibility is to start buying oscilloscopes, preamplifiers etc. to replace the stuff you request. In Finland, this will unfortunately mean long deliveries and

consequently, a lag of half a year at least in getting the work started. Therefore, we should be very glad if we could keep the above set here. Please, do not misunderstand this as just another manifestation of a collector's instinct only.

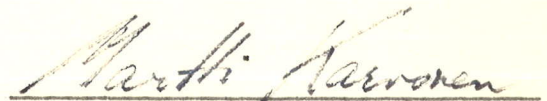
Nedeljković did a good job. I shall have the coding lists typed and sent to you, with a provisional tabulation of the agreements versus disagreements. I await for your further instructions concerning the ECG methodical studies.

With best regards,

November 5, 1964

Sincerely yours,

Dr. Henry Blackburn
Laboratory of Physiological Hygiene
University of Minnesota
Stadium, Gate 27
Minneapolis 14, Minn.
USA



Martti Karvonen

Dear Henry,

Thanks for your correspondence, for the cables, and - above all - for the tapes, magnetic or otherwise, which all came in time, once with the margin of 10 minutes only. This added considerably to the excitement of the field study.

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November 12, 1964

Dr. Martti Karvonen
Institute of Occupational Health
Haartmaninkatu 1
Helsinki, Finland

Dear Martti:

I hasten to answer your entertaining and sardonic letter, and to thank you for the splendid work done in collecting such excellent data. One package of 9 reels of 1/2" tapes recorded in W. Finland, one package of 25 reels of 1/4" tape, and one package of microfilm arrived. The E. Finland 1/2" tapes have not come, and presumably will, but you might want to check at your end.

We finally discovered how it was the earlier shipment of tape went to you by surface rather than air mail, but there's no use in belaboring the issue.

Work has started on all lines to make use of these data. You should know, by reading between lines, that we must get something going on them or there will be no more applications in the field next Spring or any other time. For 3 years we have been putting stuff on tape with no good results. Pentti has done the major effort in this, but only as a "spare time" project, and it is a big blow to our future plans his not coming here. Nevertheless, I have worked and finagled, and all here have chiseled from budgets, for four years to finally assemble the equipment you so graciously accept as a gift, and now we must make best use of it. From that standpoint only there is logic in your letter. We are all anxious to develop methods in this field and you have some boys with the capacity to do this. We want the equipment where it can best be used, at this time.

However, it is clear that we cannot proceed without our oscilloscope ^{OK} which must be returned at once with the early air freight shipment. Pentti will be here in 2 days and I'm sure you'll accept whatever decision is made about the calibrator and 2 amplifiers at that time. We will try to arrange to replace them, but Pentti informed me earlier you could record on tape, using the Elema amplifiers, into the Mnemotron Unit which will stay with you.

Our A-D conversion is working and we have good computer programmers.

Dr. Martti Karvonen
November 12, 1964
Page 2

We have already doubly copied one complete reel and sent one to Pibbergen and one to Cady in New York to see if they can read them, and will keep you informed of progress. I will get my material for the Helsinki meeting to you before I leave for Geneva. I'll be care of Fejfar November 29-December 18.

Best regards,

Henry Blackburn, M. D.

HB:lk

December 1, 1964

Dr. Srećko Nedeljković
Internacionalnih brig. 51
Beograd, Yugoslavia

Dear Doctor Nedeljković:

I am glad you enjoyed the work with the team in Finland and, as I have informed you previously, the Finnish team was most happy to have you work with them.

I am very glad to know that you will be able to participate in work in Italy next spring. The schedule is being developed between Dr. Fidanza, Dr. Blackburn, and myself. I note that you would prefer the period April 20 to the end of May but that, if need be, you could take part in the earlier period instead. In any case, it would be nice if you could listen in on the proceedings of the RESEARCH COMMITTEE at Venice in the period April 12-17.

Certainly work in Italy will include something with tape recording of electrocardiograms and I think some further experience with orthogonal leads and telemetry will make it practical to use these methods in other field situations. We may hope, therefore, that before long we may attempt some such work in your part of the world.

With best wishes,

Sincerely,

Ancel Keys, Director

AK:cj

CC: Dr. Blackburn
Dr. Fidanza

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INSTITUTE OF OCCUPATIONAL HEALTH - L'INSTITUT DE MÉDECINE DU TRAVAIL - INSTITUT FÜR ARBEITSMEDIZIN

HAARTMANINKATU 1—HELSINKI—FINLAND

DIR.PROF. LEO NORO, M.D.

January 20, 1965

Dr. Henry Blackburn
Laboratory of Physiological Hygiene
University of Minnesota
Stadium, Gate 27
Minneapolis 14, Minn.
USA

Dear Henry,

You may be interested to hear from our progress. The sending of the cholesterols has been delayed, due to the circumstance that the particular type and size of filter paper your laboratory prefers was not available in this country. I expect that this phase of the work will soon be started.

Last week
~~Yesterday~~ we discussed the future of the ecg:s. We agreed that Kallio will reread blindly all the series, and that Sven Punsar will also read all the ecg:s. Some of the existing discrepancies are due to slight shifts in the criteria between Mohacek, Nedeljkovic, and Kallio. Kallio will write down directives for these points. After having all these readings available, Kallio and Sven will go through all the discrepancies and make a decision on each ecg for coding.

In order to treat the series as subjects, not only as clinical forms or ecg:s, we must agree on the principles of classification. Are we going to define all the following categories, and if so, how?

A. Probable IHD

1. Angina pectoris
- 2a. Recent infarction
- 2b. Old infarction

B. Possible IHD

1. Sudden death
2. Atypic angina pectoris
3. Decompensation, not explainable by other disease
4. Arrhythmia, not explainable by other disease
5. Enlarged heart, not explainable by other disease
6. ST and T changes at rest or after exercise (when not digitalis has been used)

If we want to proceed with the analysis of our data along the lines you have suggested - and we definitely want - a decision on this point is urgently needed.

Equally urgent is a copy of the ecg results of 1959. Neither Esko nor myself have ~~been~~ received that document from Minneapolis.

Due to an unfortunate misunderstanding between Esko and myself, the information on dyspnoea was not recorded at all. We tried to remedy the situation by sending a questionnaire to all the participants. A list of the answers will be sent to you as soon as most of the answers will have arrived.

The miniature chest x-rays have been read by a lung specialist. A roentgenologist specialized in cardiology will read them again, and also measure the heart sizes.

In what form do you wish other information to be transferred to you? Are you satisfied with the smoking code? How about the pulmonary information?

We have now increased the strength of our statistical department, and I believe that we could process a lot of our data in foreseeable future.

I hope to hear from you soon.

With best regards from all of us.
 our progress. The sending of the cholesterol has been delayed, due to the circumstance that the particular type and size of filter paper your laboratory prefers was not available in this country. I am sure that this phase of the work will soon be started.

Sincerely yours,

Martti Karvonen

Martti Karvonen

P.S. While this letter was being typed, your cable arrived. The belt and the input cable are sent to you today. We shall not need the Argonaut power supply any more. In fact, Robin Herron finished a few days ago all the taping work planned, and we can return to Minneapolis all the equipment needed. All the rest we keep here for sending directly to Italy, on your directions.

Don

January 27, 1965

Dr. Martti Karvonen
Institute of Occupational Health
Haartmaninkatu 1
Helsinki, Finland

Dear Martti:

Henry Blackburn will write to you about the plans for the field work (5-year follow-up) at Crevalcore and Montegiorgio. Briefly, it appears to be possible for us to have an engineer working with E. C. G. tape recording for the 30 days or so in each place. Pentti and Henry B. expect to be on the scene for the week of meetings in Venice and about two weeks thereafter, for work at Montegiorgio starting about April 20.

Andy Dontas will be in Italy for about five weeks, either arriving at Crevalcore for the start of work there on March 10 and staying through the Venice meetings ~~or~~ staying on for the work at Montegiorgio finishing about May 20.

This is to advise you that I have been able to set aside \$750 for Dr. Herron to work with the team in both Crevalcore and Montegiorgio where, presumably, he would be mainly engaged in pulse wave recording. This sum should cover living expenses. I estimate the latter at perhaps \$10-\$12 a day for Crevalcore (staying in Bologna), \$9-\$10 a day for Montegiorgio (staying at Fermo) and \$15 a day at Venice. Can you provide Dr. Herron's transportation? And are these arrangements suitable?

I am sending a copy of this letter to Andy who will, I trust, be in touch by mail with you or Dr. Herron.

At Venice we shall have a good attendance. Margaria, Donald Reid, Geoffrey Rose, and many others about whom you probably know already, will be with us.

Good wishes,

Sincerely,

Ancel Keys, Director

AK:cj

CC: Drs. H. Blackburn, A. S. Dontas, F. Fidanza

Dr. Keyp's info

January 28, 1965

Dr. Srecko Nedeljkovic
Internac. Brigada 51
Belgrade, Yugoslavia

Dear Srecko:

I have never taken adequate time to thank you for your very excellent and thoughtful comments on ECG coding. I look forward to discussing further with you in Italy.

Though I have always avoided mechanical aids or magnification, we have preliminary evidence that the enclosed tool improves reproducibility of Q wave classification and are now testing S-T. Would you take good care of it and use it as you like, or return it.

We are returning the first round of Velika Krsna records soon.

Regards to
Prof. Djordjevic & Josipovic

Henry Blackburn, M.D.

HB/mjj
Encls.

GREEK SOCIETY FOR THE STUDY OF ATHEROSCLEROSIS

37 QUEEN SOPHIA AV., ATHENS - GREECE.

January 29, 1965

G. MICHAELIDES, M.D.
PRESIDENT

D. PAPAPANAGIOTOU, M.D.
VICE-PRESIDENT

C. ARAVANIS, M.D.
GENERAL SECRETARY

D. LEKOS, M.D.
TREASURER

Dear Henry:

Thank you for your letter of December 29, 1964. Under a separate cover you will receive all the mortality forms from Crete up to December 31st, 1964, except for the following names which you have received already: Anetakis Stavros (No.534), Stratakis Michael (No.707), Markakis Chronis (No.560), Kaloudakis Athanasios (No.439) and Galanakis Antonios (No.92). If there are any overlapping names please disregard them. A complete review of dead and sick people has been made by me personally a short time ago, and you will notice that some mistakes in reporting correct incidence in dead people has been made by my co-workers and local authorities in previous follow-up check-ups.

Concerning Corfu the date of death of the people in your letter are: No. 155, October 24, 1962. No.335, April 8, 1962 and No. 671, April 24, 1963. Detailed data on dead people will be sent to you in the near future after a personal visit to Corfu.

I spoke to you long time ago about a desk of all E.C.G. data from both studies in Crete and Corfu, with the clinical diagnosis, the B.P., the body weight and fatness and the cholesterol. Would you be so kind to send me these data at your earliest convenience.

With best regards and wishes to Mrs Blackburn and to you,

Sincerely,

Christ

Christ Aravanis, M.D.

P.S.

Could you mention to Ancel that the money for the present dietetic study can be transmitted to Dr. Lekos or to me directly. Also that I would like to have a photocopy of Dr. Galanos letter to him dated January 4th, 1965.

He can be sure that the dietetic survey which starts next week will be successful. I will supervise it personally.

Chy.