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SANTA BARBARA • SANTA CRUZ

INSTITUTE OF INTERNATIONAL STUDIES

BERKELEY, CALIFORNIA 94720

CRSP - 215 Moses Hall

July 6, 1984

Documentation Coordinator  
Office of Development Information  
and Utilization  
Bureau for Science & Technology  
U.S. AID  
Washington, D.C. 20523

Re: DAN 1-1309-G-SS-1070-00 (Article VII)  
Nutrition Intake and Function

Dear Coordinator:

Submitted herewith is a copy of a trip report for Dr. Ronald Watson  
(Egypt Project) covering period May 7 - June 3, 1984.

Sincerely,

A handwritten signature in cursive script, appearing to read "Filomena Brown".

Filomena Brown  
Administrative Assistant

Enclosure

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Ronald Ross Watson  
7 May - 3 June, 1984

People Contacted:

Washington, D.C.

Dr. R.K. Chandra

Dr. W. Beisel

Cairo, Egypt

Dr. Amal Sami Ibrahim - Nat. Cancer Institute

Dr. Amin Said - NI

Dr. Ahmed Daukouri - NI

Dr. Hekmat Ali - NI

Dr. Mostafa Mansour - NAMRU #3

Dr. Daisy Fleita - American Univ. Cairo

Dr. Fsmat Ekladious - Univ. Cairo

Dr. Mervat - NI

Dr. Nadia - NI

Dr. Senea - NI

Dr. Mohammed El Ghorab - NI

Dr. Heikum - University Cairo

Nancy Meyer - NI/CRSP

Dr. Skelly - NAMRU #3

Captain Stek - NAMRU #3

Dr. M. Mansour - NAMRU #3

Dr. R. Scott - NAMRU #3

Schedule

7 May -- Flew to Washington (left Tucson at 7:55 am)

8 May - Met Dr. Beisel and Dr. Chandra discussed "Nutrition, Disease and Immunology". Made a presentation at Symposium of International

Pediatric Congress. Flew to New York and on to Cairo.

9 May - Delayed 8 hours at Rome by Mechanical problems of TWA aircraft, arrived 10:00 pm Cairo. Customs due to waiting, was very smooth passage in Customs. No one even checked us out. Refrigerated samples and one box of reagents for zinc work (carried in lieu of personal suitcase) delivered to NI. Refrigerated items carried for there. 11:30 pm arrived at Manial Palace.

10 May - Met Drs. Fleita, Esmat, Nadia and Mervat. Found that 179 venous blood samples collected and assayed. Humoral assays being repeated with different concentration. The E-Rosette done mostly on adults. Lower values than expected, seen sometimes better quality control devised to determine if any problem exists. Plasma from venous blood stored properly in aliquots. Very few schoolers or toddlers done. Although discussed in detail in November, 1983, when sampling began, plasma from toddlers and schoolers (30-60 ul/person or 1-2 capillary tubes) was not saved for Core immunology assays. This involves 7 assays for immuno proteins or components of biochemical and nutritional status assessment. Although that set aside for non-core zinc assays could have been used, Drs. Watson, Dakouri and Fleita agreed to get capillary samples beginning at this time (May 1984) from all schoolers and toddlers. These would be plasma or serum from two capillary tubes, collected and stored frozen by Dr. Dakouri for Mervat and Nadia. Some venous blood needs to be collected from schoolers for cellular assays.

Attended regular Thursday project meeting. Brought up question of capillary samples from schoolers which was discussed in detail later with Dr. Dakouri. Seemed to be resolved.

11 May - Holiday. Met various Americans working on USAID and other agricultural projects. Other personal time.

12 May - Planned rest of time in Egypt, unpacked boxes (waited until day Ameli was working) and refrigerated items. Found one assay lacking standards which needed to be ordered separated, but I hadn't. Luckily Dr. Esmat

had some and is trying to reach local representative to get more for future. Found out that during Ramadan no blood samples to be taken. Also concern expressed about problems of sampling of children when out of school. Also problem of getting blood samples when new "young doctors" start work who do not know the families sufficiently to get cooperation. Wondered about need to overlap by a month ??? of doctors who helped in project this past year, with new ones.

Discussed in detail work for Nadia's thesis with Dr. Esmat. The problem of helping Mervat still exists. If she is to have a clear decision Dr. Galal needs to call her department chairman and ask for a release to allow her to do immunology "for the sake of the Institute" or tell Nadia she has to do the original thesis. But seems critical for good feelings to solve this promptly upon Dr. Galal's return by Dr. Galal.

Went to National Cancer Institute to meet Dr. Amal Sami Ibrahim. Set up my seminar, planned visits to various sites and people, including schedule for University of Arizona Urologist, Dr. Stanisec. Planned meeting him at airport to expedite entrance of supplies and forms for CRSP he brought.

Set up visit to NAMRU #3 with Dr. Mansour and seminar. Planned visit to NAMRU Immunologist (Dr. Skelly) with Dr. Esmat to get help for Nadia on her Ph.D. thesis.

Discussed Dr. Mohammed El Ghorab's work on vitamin A and beta carotene, and cancer in Egypt. Continued discussions suggested by Dr. Galal in USA on this matter. It may be important to measure these and some trace elements on a subsample of biological samples if non-CRSP funds are available.

13 May - Met Nancy Meyer today, she was sick and at home yesterday. We discussed need to have someone check that plasma samples collected from schoolers and toddlers for immunology and nutritional assessment assays. Worked with Nadia and Mervat in getting ready final assays with new reagents and brought requested list of reagents needed for rest of the assays

they plan this year. Send second telex relating to urgent supplies and papers to be sent with Dr. Stanasic. Met with Nadia and Dr. Esmat to discuss again extra research she would do for her thesis. Met in evening Dr. Esmat and her husband Dr. Munier for further detailed discussions and dinner. Discussed research problems with Dr. Arthur Wallace, UCLA professor and friend who was working in Egypt. His specialty is trace elements and needs by several biological systems, plants, etc. so discussed effects of altered agriculture on crops and human nutrition. Also went to USAID for paper needed for hotel and found Chase bank for money exchange.

14 May - Continued work at NI. Went to National Cancer Institute and presented a seminar on "Nutrition and Skin Cancer: Arizona Program". Discussed vitamins with Dr. Sherrif (Dean of NCI) and Dr. Amal Sami Ibrahim (chief epidemiologist) after seminar. Tried to evaluate effectiveness of E-rosette techniques used by Nadia in the afternoon when samples of blood arrived by providing own blood as control, etc. Sent telex again on needs and supplies coming. Met Dr. Abdul Nasser of Department of Surgery, Ein Shams University who is interested in an immunology/nutrition problems. Met Dr. Fleita, and her colleague from Ministry of Industry as well as nutrition research with her student, Maha. Met Dr. El Aaser's chief biochemist of Cell Biology department of NCI for discussions of his work on vitamins in Egyptians.

15 May - Left at 7:30 am for NAMRU #3 with Dr. Mostafa Mansour. Met there to discuss with their immunologist, Dr. Regina Skelly, the possibilities of Nadia doing thesis work with some project samples there two to three times a month. Raised issue with the new U.S. Navy Captain, Dr. Michael Stek, M.D., and got a tentative approval upon submission on proper/protocol and involvement of Dr. R. Skelly. Discussed in a seminar use of aminopeptidases to identify bacteria as a favor to Dr. Mansour in helping him with a project ("Identification of Neisseria and Eight human Pathogenic Yeasts Using Aminopeptidase Techniques"). Also discussed Dr. Mansour's work on schistosomiasis and low serum, vitamin A in men, as relates to samples from Kalama and need to measure same. Met with Dr. Robert M. Scott from USAMIID at NAMRU, Dr. Scott has expressed interest

in helping determine role of rota virus in stool specimens. He has previously discussed this with NI (Nov. 83). He reaffirmed interest and will provide free assay kits for Mervat or Mahar. Talked about immunology project with Captain Stek, Dr. Rejina Skelly, Dr. Michael Dunn and others. Met Dr. Mikhael and wife Amin, of University of Cairo who wish to be students in USA. Spent four to five hours with Dr. Heikum and Dr. Daisy Fleita on discussions of project.

16 May - Met Dr. el-Aaser to discuss his concerns related to nutrition, especially that of retinoids, and health in village people. Discussed doing some samples for beta carotene status, etc. in our project with people last few days. Got a number of reprints for Mary Mohs, et al. for the book on Nutrition - Middle East from Dr. Aaser. Met Dr. Amal S. Ibrahim of NCI again to update his list of people to see and plan Friday evening scientific/social event for Dr. Stanistic. Discussed nutritional/health problems of adult farmers.

Took blood from Mervat as control for E-rosette test. Apparently no capillary bloods taken so unable to view zinc collection (no one in Ghorab's lab). Only one venous blood today, six when Nadia did control earlier.

Gail Harrison and Osman Galal called relative to IgG, IgA and IgM serum assays. All are working here. We lack anti-IgM antisera, but is ordered to come with Stanistic today. They wanted data analyzed by end of September on effects of mild/moderate malnutrition on IgM, IgA, and IgG so Mexico could decide to do or not. We have done most of 178 venous blood samples collected. However Daisy and Mervat want to repeat them in June. All these things to be done by end of June, so should have adult samples. If major change seen, would be more likely in toddlers or schoolers. Since no capillary samples collected, no blood to be drawn in Ramadan, we can not do Mexico any good by date needed. It was agreed verbally and in writing when collection started in November 83 with Dr. Daukoury that 40 ul of serum or plasma of all people for which no venous blood was collected would be saved for seven

core immunology assays. This has not been done rather duplicate ferritin assays run and rest (100 ul plus) set aside for zinc assay. If samples collected from now on we can get good data from work. Sent telex to Harrison to reconfirm late night phone call. Mexico, if they don't do serum immunoglobulins will have much poorer data on secretory immunoglobulins. Publishers and immunologists will want both as they are somewhat related. I am surprised Dr. Chandra concurs as I presume he must. We will do assay when we get capillary samples, so main problem is using weaker Mexico data.

17 May - Attended 9:30 am project meeting (see attached minutes). Key decisions: (1) Dr. Dakoury and Dr. M. El Ghorab will save two capillary tubes from each toddler or schooler, but not adults where venous blood. (2) Diarrhea fecal samples to be collected for immunology and parasitology. Key suggestion: Train one to two young biochemists at NI to do work, save money, with colleague Dr. Esmat or another Dr. Fleita doing three to four weeks of training.

Went in the evening to airport to pick up Dr. Stanisic who came as a University of Arizona (non-CRSP\_ representative to look at nutritional problems, etc.). He brought six boxes of forms, refrigerated reagents, etc. Retrieved Dr. Stanisic and baggage and settled into hotel, Manial Palace.

18 May - Although a holiday we went to Kalama to see field operations, as the first free day to do so. Found that refrigerated items not in Stanisic's luggage, rather in boxes, packed and locked in in van-as-holiday no one found with key. Luckily Stanisic and driver were "Chicago trained" and broke into van (no damage). Items for refrigerator stored before leaving for Kalama. Went with young doctor Mohammed H. Hassaballah to watch in detail the interviews. Stanisic helped in diagnosis of potential bladder cancer and saw how referral works. Excellent experience on return observed that other doctor's had collected blood. Which was set on cover of van engine (inside) during trip. Upon touching venous blood tubes they were "hot as a pistol". Daisy Fleita called and will prepare or I will, a

styro foam box to protect samples. Went for later discussions with Dr. Amal S. Ibrahim, Dr. Esmat Ekladious.

- 19 May - Visited NI to get xeroxing, determined status materials in all boxes. Discussed need for blood transport box with Farouk Shaheen. Also visited National Cancer Institute. Saw cytology Dr. el Morsey, met Dr. Ibrahim and Dr. Mahmood Sherrif the Dean for detailed information on cancer, schisto somiases and nutrition. Met Esmat and Nadia again, looked at C<sub>3</sub> plates which worked well.
- 20 May - Talked at length with Dr. Esmat on problems and work in immunology. Presented seminar at NI on "Malnutrition, Immune Function and Renutrition". About 45 people in attendance including most young doctors. Objective to help staff appreciate why blood samples, etc. are collected and needed. Daisy and Mervat will check each day for capillary blood, which may solve that problem. Esmat's son wants to come for six week medical elective. Tom Stanisic to arrange possibilities for January 1985. Discussed nutritional problems with Waafa, etc.
- 21 May - Went to NI to see Nancy on status of data to be sent back. Agreed with Mervat and Nadia on what data they would have for me to take back. Set reasonable goal to finish all venous blood (plasma) samples collected prior to Ramadan for seven core proteins by 1 July, 1984 for transmittal to Kansas. This would bring group 100% completed on samples collected. Mervat and Nadia agreed with Daisy's suggestion that they check each day for capillary samples. Nadia pleased with outline for thesis and extra work involved. Letter drafted for NAMRU #3 help they can provide. Agreed to produce soon styrofoam container for carrying venous blood samples. Spent afternoon and early evening with Dr. Mohammed from NI.
- 22 May - Went to NCI to see Dr. Amal S. Ibrahim with Dr. Stanisic. Outlined ideas for solving their problems of bladder cancer. Suggested some projects for graduate students in nutrition for work with Dr. Waafa and Dr. Amal S. Ibrahim.

23 May - Went early to NI. Met Esmat to discuss details of Nadia's committee thesis work, method of getting samples, correlation with CRSP nutritional data, etc. Typed letters as needed to outline work done and commitments made. Got forms ready to return to USA in box as only brought one suitcase, so shouldn't need extra baggage (but did). Xeroxed a variety of books and articles for various people. Met Dr. . Amal S. Ibrahim and was introduced to Dr. Mohammed A.S. Attia, an immunologist, as well as Dr. Hassan, a bladder surgeon. The latter wishes two months training in USA with Dr. Stanisic in urology. Discussed exchange, training opportunities for others, including pathologist. Got from Dr. Esmat a leukemia blood sample (low T-cells) for another quality control sample for E-rossette for Mervat. Went to look for Mervat at part 1 results of this as high levels of cells. She discovered it was unusual rapidly. Also observed for Mary Mohs the sample collection of zinc samples. Found that tubes were being cut with multiple cuts, and explained desire for one cut with file. Also asked students about samples for immunology assays from schoolers and toddlers. It surprised them. Dr. Dakoury discussed it with them and we agreed again that samples be saved for all core components. Best solution collect two tubes extra even if extra stick. Also agreed that in absence of ideal quantity, one capillary tube for immunology even if meant no duplicate assay of ferritin or if number of tubes for zinc reduced from 3 to 2 in process.

24 May - Worked with Esmat and Daisy on plans for data, essays etc. Went over needed reagents with Daisy Felcta checked again the quality control for E-Rosette with Mervat using a B-cell leukemia supplied by Esmat yesterday and results were correct. Visited American University Cairo with Dr. Daisy Fleota and Dr. Heikem. The latter is a chemistry professor at University of Cairo. Planned to meet again with his colleagues tomorrow to see if we can help them get training at the University of Arizona. Also attended project meeting where we discussed progress report left for Dr. Galal. Key items: need for capillary samples from schoolers, freezer and refrigerator for storage. Collected more data forms and customs

letters including for hair samples. Met Dr. Amal again with letters etc. Discussed nutritional assessment with Dr. M. El Ghorab and Dr. Wafaa.

25 May - Holiday - packed forms, hair samples, etc. in extra box for transport. Met Nadia and her husband to sign papers as one of her Ph. D. thesis committee members related to her work on nutrition in the CRSP. Met Dr. Heikem (Daisy's husband) to help three students with "Peace-AID" scholarships get situated at University of Arizona. Discussed research with Dr. Stanasic and left him a list of items that need attention after I leave. Discussed medical education opportunities with Canadian student.

26 May - Left Egypt for Budapest, Hungary on non-CRSP Funds. Gave lectures as follows:

1. Vitamin A and Cancer Prevention at \_\_\_\_\_ University in Pecs
2. Extending lifespan by nutritional changes sponsored by  
Institute of Nutrition and Higiene, Physiological society  
Met: Prof. Tevodar Zelles, D.D.S., Peter Gergely, Janos Gergely,  
Tibor Kremmer, Tibor Bakacs, Prof. George Bivos, Janos  
Szebeni, Magda Antal, Laslo Selmici

CRSP PROJECT MEETING

3 May 1984.

1) Immunology:-

- a) Samples coming in regularly at good time of day (2 p.m.)
- b) Buying Supplies for Lab:  
Write request for Dr. Galal's approval, then purchase can be made and will be sent to N.I.

2) Discussion of last week's Minutes:

- a) Conflict caused by two groups entering same H.H. was followed up by Dr. Wafaa. The 2 H.H. mentioned were on F.I. schedule.
- b) Dr. Ahab was present to discuss cooperation of the drivers.
- c) Sending Data:  
Egypt Postal Service - 50 L.E./2.5 KG  
DHL Courier - 64 L.E./0.5 HG  
TWA Cargo - 43 L.E./6 KG to NYC

3) License of CRSP vans needs to be renewed.

4) Results of Cognitive tests can be affected for adults who are fasting during RAMADAN. Dr. Magda asked for Telex to Ted Wachs to alert him to this problem.

5) Pregnancy Survey:

Dr. Nargas will meet with Dr. Shaheen Saturday, 5 May to plan schedule.

6) Data flow:

Dr. Saneya is preparing report for the month of April.

7) R.M.R.

No reply to N.I. from Beckman, but Dr. Ishmail has contacted Beckman. An Air-Conditioner may be needed in CRSP House this summer due to sensitivity of the equipment.

CRSP PROJECT MEETING

10 May 1984

Quality Control - Cal. #/of  
milk  
No. milk  
Food/cheese 2 capillary  
10K tubes  
Fecal Samples/Diarrhea

Dr. Ronald Watson, University of Arizona, arrived in Cairo 9 May and was present at the meeting.

1. Field Situation:

A. Still some overlapping of Data Collectors from different groups.

A copy of schedule in the CRSP House along with a member of Mr. Regga's team to direct rescheduling would be helpful.

B. Additional furnishings needed in CRSP House:

Storage cabinet for each team and additional chairs.

2. Discussion of last week minutes

Dr. Wachs agreed with proposal to suspend cognitive tests for adults during Ramadan.

3. Pregnancy Survey:

Eight pregnancies were identified by physicians during the past week.

4. Report of Ramadan Plans:

Morbidity - will do Morbidity Recall & Anthropometry recall, but no blood samples .

Identification and examination of pregnancies will continue including physical exams, but no blood samples.

Child Care, Sanitation, Food Intake-

Follow regular monthly schedule, but no new Households

Cognitive testing -

Will continue with T & S, but not adults.

5. Dr. Watson mentioned that when milk samples are collected 2-3 mls need to be reserved for Immunology testing.

6. Dr. Watson will present a seminar on Immunology and Malnutrition, Sunday, 20 May, 12 p.m. in Dr. Galal's office.

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OBJECTIVE:

Determine relationship between nutritional state, diarrhea and presence of Rota Virus in stools of toddlers and school children.

PROCEDURE:

Toddlers and Schoolers who are in core families, and who meet the qualifications of diarrhea, will be sampled. A stool specimen will be placed in the container, labelled with code number and date, and put in refrigerator until brought to Nutrition Institute for storage. These should be collected when other samples are being collected for blood or saliva. One half of sample will be put into a labelled bottle and frozen or treated for eventual analysis for parasitology. The other half will be frozen until analyzed for Rota Virus at the NAMRU-3 with help of Dr. Rob Scott, Dr. D. Fleita and a student.

~~2~~ <sup>samples</sup> (blood) of venous (if possible) or capillary blood (4 capillaries) should be taken. Nadia or Mervat will remove plasma and store for later analysis. These samples are for disease/morbidity, so will be in addition to regular ones collected for immunology, zinc or ferritin assays. The serum samples need to be divided into two aliquots and frozen. Hopefully 200 specimens can be collected and analyzed during the summer months. Then the Rota Virus work will be analysed before considering <sup>continuing</sup> etc... After analysis any sample found to contain Rota Virus should result in the child being seen again (2-4 weeks later) for fecal samples to see if they remain infected after cessation of symptoms.

ROTA VIRUS:

This is a diarrheal infection of the young. Most adults have antibodies to the virus and are probably immune. An adequate vaccine is not available, nor is the relationship, if any of mild/moderate malnutrition to incidence or severity of the disease known. Little is known about Rota Virus in Egypt, although several groups have shown that it is prevalent here. This sort of work will help determine if there would be benefits, due to the severity of the disease, in trying to test a vaccine in children or whether it makes little effect and can be ignored.

EFFECT OF MILD/MODERATE MALNUTRITION OF T SUPPRESSOR CELLS: A JOINT NUTRITION INSTITUTE, UNIVERSITY OF CAIRO, NAMRU-3, AND UNIVERSITY OF ARIZONA PROJECT.

OBJECTIVES: (1) provide a Ph.D thesis project (or part of) for Nadia (2) Determine effect of malnutrition on helper and suppressor T-lymphocytes, and (3) Test several brief treatments to enhance suppressed or altered T-lymphocyte development (Invitro modifications of cells only).

PROCEDURE: Phase I Mild/Moderate Malnutrition. Time for Completion:

(June 84-Dec. 84) People from the village of Kalama will be assessed by others as part of the CRSP for food intake, nutritional status, morbidity etc. In the process, venous blood will be taken from adults and school age children. They will be assessed for E-rosette cells, Immunoglobulins and biochemical measures of nutritional status (C3, C4, transferrin, albumin, prealbumin, CRP, CB) by Nadia. Then purified, peripheral blood lymphocytes will be stained and fixed at the Nutrition Institute for OKT4,8,11 and Leu 7. Then they will be taken to the NAMRU-3 twice per month beginning in July for joint measurement with Dr. Skelly (Nadia has previously trained with Dr. Skelly). Serum samples will be used to determine amount of IgM antibodies to Schistosomiasis as a measure of infection. Then data will be analyzed to determine effects of either parasitism level (active or passive), nutritional state and Helper, T Suppressor and Natural Killer cells. Ideally 30-40 adults and 40 children will be measured as minimum.

Phase 2 Severe Malnutrition, Time for Completion (Jan. 85-Apr. 85)

Since mild/moderate malnutrition is very much like the normal condition but very ~~present~~ <sup>and prevalent</sup>. There may be difficulty in showing statistically significant differences from well nourished controls, even if a real difference exists. Therefore, some severely malnourished children and adult in a Cairo hospital will be age matched and evaluated for nutritional status in the same fashion. They they will be sampled as above, ideally 15-20 <sup>children</sup> and 10-15 adults with clinical kwashiorkor or marasmus. As they are sampled enough cells will be collected to do some short term incubations with immunomodulators (Thymosin, Thymosin alpha 1 and a media control). After incubation for two hours at room temperature, (a media control will be used) the same measurements of T subsets will be made.

If the treatments cause significant changes then some additional patients will be selected who are mild/moderate malnutrition.