

MRC

Medical Research Council
External Staff

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July 1969

Dear Dr Oldendorf.

You kindly offered to cooperate in an extensive study to try and relate bowel content and activity to diet and to disease patterns.

I am now enclosing:

1. A memorandum outlining the available epidemiological evidence and suggesting investigations that might be undertaken.
2. Suggestions (Appendix I) for collecting stools and estimating total transit time and stool weight, bulk and consistency.
3. Proformas for recording findings - one for each trial of five volunteers.

Could you please complete these in duplicate, return one copy to me and keep the other for your records?

4. Five self-contained packs, one for each volunteer, and each containing:

25 radio-opaque shapes

Five polythene bags with appropriate identification markers (see Appendix I)

Four plastic clothes pegs for fastening bags (see Appendix I).

Six rubber bands for sealing bags

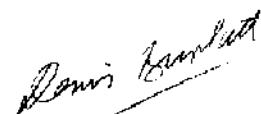
Three unmarked polythene bags to cover any bags that may be found to leak.

5. Approximately 20 extra bags for measuring stool bulk (see Appendix I)

When we analyse the results from the various investigators I will keep you informed. You will be one of the collaborators in the major enterprise, but if you wish to publish your results locally I will supply you with figures from other areas for comparison.

I would like to say again how grateful I am to you for your cooperation in this enterprise.

Yours sincerely,



Denis F. Burkitt

Materials supplied

One set of five polythene bags, 25 radio-opaque plastic "shapes", four clothes pegs and some rubber bands, are supplied for each volunteer in the trial. Three extra bags are included to cover any which may be found to leak.

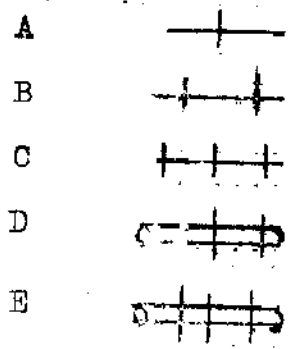
Approximately 20 extra bags needed to measure stool bulk (see page 2 of Appendix I).

The name of each volunteer will be represented by A, B, C, D or E, and the stools from each volunteer numbered 1 - 5.

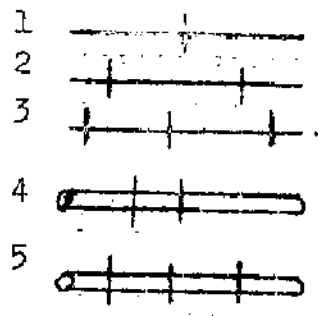
For example, all five bags for volunteer A are labelled A, and also labelled 1, 2, 3, 4 or 5 for each consecutive stool.

So that the volunteer and the stool number can be identified on the x-ray films, there will be two radio-opaque markers on each bag, the marker on the left to identify the volunteer and the marker on the right to identify the stool number:

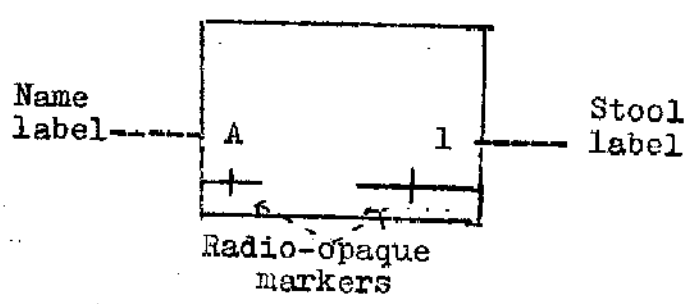
Volunteer markers (short)



Stool markers (long)



So the first bag for volunteer "A" will be identified



and the third bag for volunteer "E" will be identified

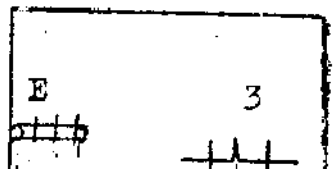
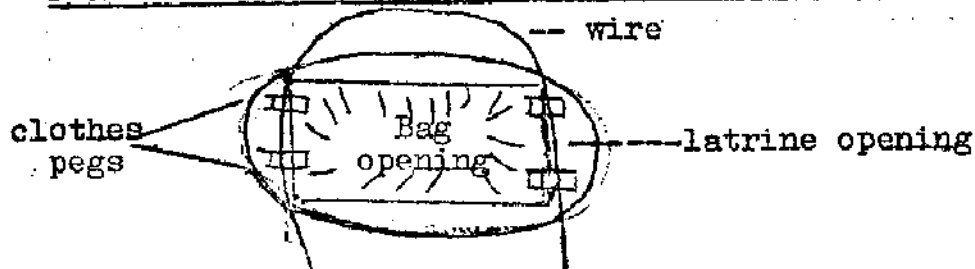


DIAGRAM OF METHOD SUGGESTED FOR FIXING POLYTHENE BAGS



INSTRUCTIONS FOR CARRYING OUT THE TESTS.

The 25 shapes should be swallowed shortly after a motion is passed, otherwise there would never be any shapes in the first bag.

The time that each stool is passed must be recorded as the number of hours since shapes were swallowed. Several stools could be weighed and estimated for consistency at the same time, and collectively x-rayed. This would be much less time-consuming than doing them individually.

Results should be entered on the enclosed proformas. Please complete in duplicate for each trial of five volunteers, send one copy to me and keep one for your records.

For the sake of uniformity could the weight be entered in grams? (1 oz. = 28 gms.)

Consistency:

- X = loose;
- Y = soft, forming a pultaceous mass in bag;
- Z = firm and formed.

Recommended X-Ray exposure and development:

on 4 valve, full wave unit using 2 MM Aluminium filter,
50 KV 50 MA.1.0 sec.ILFEX film. 3.mins. dev.in DX80R.at 68°F.

If machines are capable of only 15-20 ma output the exposure time must be increased, unless fast intensifying screens are used.

Total transit time will be taken as the time that elapsed between swallowing the shapes and recovering 80 per cent of them (20 of 25).

It is also important to measure the total bulk of stool passed daily. This can be done by expressing the air from the plastic bag containing the stool and immersing it in water and measuring displacement. Since this manoeuvre tends to crowd together the radio-opaque markers it is best done separately.

Additional bags are included for this with markers to indicate the volunteer concerned, but without markers for consecutive stools or radio opaque markers, since it is only the total quantity over a period of say 3 days which is required in order to estimate the daily output in bulk.

Stool bulk measurement need not necessarily be done on the same volunteers as are doing the transit times, and all stools passed in each 24-hour period can be put together and measured in total. The output for three patients over 2 - 3 days should be sufficient.